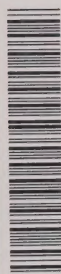


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OBJECTIVE

The efficient production of beef from available forage resources is a major objective of both government and private planning and in many countries of the world great economic gains are possible through the introduction of improved foundation stock.

The purpose of this booklet is to provide a forthright description of the economic characteristics of the modern beef cattle which have been developed in Canada and which are now being exported to assist in the development of more efficient beef production enterprises throughout the world.

The prime objective in the selection of Canadian breeding females and bulls has been the efficiency with which forage resources could be converted to beef. The result of this long selection process is a fast-maturing animal of relatively large size, which is a hard working and efficient forager and yet one which is easily handled in confinement. The development

of these qualities has been forced by economic pressures; by a need for efficiency in production under climatic conditions which are often unfavourable.

Only those strains which carried the genetic potential to perform well have been selected and propagated from the original importations of Hereford, Aberdeen-Angus and Shorthorn made many years ago. In recent years seed stock of the French Charolais breed has been imported for study and development and other breeds are being closely examined.

Discriminating buyers from many countries including the United States, the U.S.S.R., Mexico, Japan, Chile, Britain and the West Indies have purchased Canadian foundation stock for the development of pure herds and for crossing purposes. Performance levels for many generations are set by the basic stock and it is therefore important that only select cattle from the best possible sources be considered for foundation purposes.

THE LAND

Canada is the second largest country in the world stretching 4,000 miles from east to west and 3,000 miles from north to south. Of the total land area of 3,581,809 square miles only 270,000 square miles is classed as farm land and this is concentrated generally in a narrow band along the southern border. Although beef cattle are raised in almost all areas across the country, the large concentrations of purebred stock are found in the western provinces of Alberta and Saskatchewan and in the Great Lakes peninsula of Southern Ontario. In general the western herds are subject to greater climatic extremes and are required to graze over wider and rougher terrain. The Ontario herds are usually found on more highly developed pastures. In the extreme western province of British Columbia large herds thrive on the Interior Plateau and in forested areas. In the Maritime Provinces to the east the herds are under more intensive care in a mixed farming economy.

Foreign buyers visiting Canada usually prefer to select foundation stock in the Canadian environment which most closely resembles that to which the cattle are to be introduced.

PRACTICE

The traditional practice in commercial operations is to breed during June and July for calving in March and April. The calves are weaned at six to eight months and may be sold for finishing at this time or carried over for further grazing during the following summer season. Cattle are usually wintered in the shelter of trees or windbreaks, or in barns and are fed hay or silage during the snow season which usually occurs during December, January and February in most areas.

Heifers are usually bred to calve at either two years or three years of age. The optimum time for shipment of pregnant heifers is, therefore, during October or November.

Weaned calves will weigh 450 lbs. at six to eight months and are often introduced to heavy feeding at this age to finish for slaughter at 900-1000 lbs. at 12-14 months. Those calves which are carried through the winter months on hay and turned out for further grazing in the spring will weigh 700-900 lbs. at 17-19 months. For the Canadian meat trade these cattle are usually finished on grain for 90-120 days before slaughter at 1000-1100 lbs. A heavy fat cover is discriminated against by the Canadian trade.

The climate of the main breeding areas is indicated in Table I:

TABLE I
THIRTY YEARS — MEAN MONTHLY

	Temperature		Precipitation		Hours of Sunshine
	Max. °F	Min. °F	Rain in.	Snow in.	
London, Ontario					
Jan.	46	−6 (−26)*	1.56	18.9	61
Feb.	46	−5	1.16	16.5	90
Mar.	61	4	1.91	10.0	129
April	75	20	2.67	3.0	167
May	83	29	3.03	.2	234
June	90	38	3.40	0	242
July	93	45	3.71	0	278
Aug.	91 (106)*	43	2.78	0	253
Sept.	87	33	3.51	0	175
Oct.	76	25	2.74	1.0	153
Nov.	64	14	2.43	10.8	76
Dec.	49	−1	1.64	16.6	64
Regina, Saskatchewan					
Jan.	36	−33	.02	6.3	104
Feb.	38	−32 (−56)*	.01	5.8	119
Mar.	50	−18	.10	6.8	158
April	74	8	.43	3.8	216
May	87	21	1.54	.6	258
June	89	33	3.24	—	236
July	95 (110)*	40	2.13	—	329
Aug.	94	36	1.74	—	288
Sept.	88	21	1.10	1.2	203
Oct.	75	9	.59	2.6	171
Nov.	54	−12	.14	7.2	94
Dec.	41	−28	.04	5.8	88
Calgary, Alberta					
Jan.	51	−23	.01	5.4	106
Feb.	53	−22	.01	6.5	126
Mar.	59	−10	.02	11.0	153
April	73	11	.41	8.5	191
May	80	25	1.70	2.4	242
June	85	34	3.46	.2	236
July	91 (97)*	39	2.41	—	315
Aug.	88	35	1.96	—	268
Sept.	83	24	1.39	4.0	189
Oct.	76	11	.38	5.1	164
Nov.	62	−7	.02	7.7	114
Dec.	53	−19	—	6.2	96

*extreme



CROSSBREEDING

Controlled crossbreeding as a production technique is now widely practised and the need for selected quality in the parent stock of the pure strains used in crossing is recognized. Before truly superior performance can be achieved by hybridization it is essential that the parent stock be of select quality. In spite of these requirements very real gains can be achieved by controlled crossing or by repeated use of top quality bulls on native

stock where it is necessary to retain certain native qualities in a cattle population.

Bulls of the Canadian Hereford, Aberdeen-Angus, Shorthorn, and Charolais breeds are being exported now for these purposes. Pure herds of Canadian foundation stock are being established in many countries to provide the quality bulls or females necessary to a successful crossing program.

PERFORMANCE

High performance in beef cattle herds involves efficiency in both reproduction and in the conversion of fodder resources to beef. Improvement within a breed requires the gradual development of a genetic make-up in accord with these needs.

The traditional concept of animal breeding under which a select group of individual breeders by using their own selection and inbreeding techniques are able to develop and fix characteristics in a line or family within the herd has been broadened in Canada through a National Record of Performance Program. This program guides a large number of breeders toward concentration on the highly heritable and all-important economic characteristic of growth rate. The result has been a more widespread appraisal of the breeding worth of individuals and families within herds and the consequent development of a superior genetic makeup in beef cattle across the country with faster growth as the key factor.

The development of performance testing techniques has led to the establishment of a government three-phase policy for beef cattle.

A/ THE HERD TEST

This program is designed to provide breeders with a uniform basis of appraising individual growth rates of progeny within their herds. In the fall of 1967 more than 15,000 calves from 424 breeders' herds were weighed at weaning. Weights are recorded to cover two periods in the life of the calf—from the date of birth to the date of weaning and from the date of weaning through a 168-day feeding period. All calves born within a 90-day

period are grouped for comparison purposes. There is no special feeding practice adopted. Each breeder feeds his calves according to his own wishes. In some herd tests the energy intake is quite high and in others quite low. The purpose is to provide an accurate assessment of progeny growth rate within the herd.

Averages for breed performance are shown in the breed sections

of this booklet. These figures cannot be properly used, however, for any other purpose than to illustrate average growth rates over an extremely variable set of conditions. And it should be emphasized that growth rate is only one of the several factors which contribute to efficiency in beef production. Cattle which do not forage well, or do not reproduce with ease, or which are unusually subject to diseases, are undesirable.

B/ THE YOUNG SIRE GROWTH TEST

This test involves the feeding at central stations of groups of five young bulls—each group having a common sire. This test does not allow for carcass appraisal except

that which can be provided through the use of ultrasonic equipment. It does, however, permit the appraisal of growth rate in young bulls and an appraisal of the char-

acteristics being transmitted by their sire. The following table illustrates the kind of information which is made available:

TABLE II

Selected examples of sire group information provided 1967-68
from young sire growth tests

Sire registration	Tattoo of progeny	Average daily gain—140 days lbs.	Average daily gain index	Adjusted 365-day wt. lbs.
Station average — Saskatchewan Test Station				
141 bulls		2.68	100	902
HEREFORD				
*P754809	AVHW-42Y	2.74	102	934
	AVHW-47Y	3.04	114	949
	AVH-49Y	3.05	114	996
	AVH-29Y	2.52	94	905
	AVH-24Y	2.80	105	1,033
	Average	2.83	106	963
P982281	PPY-5	3.15	118	880
	PP-1Y	2.76	103	799
	PPY-24Y	3.04	114	986
	PPY-14Y	2.62	98	829
	PPY-6Y	2.78	104	788
	Average	2.87	107	856
ABERDEEN-ANGUS				
278869	BLR-36Y	2.95	110	989
	BLR-29Y	2.77	103	931
	BLR-13Y	3.01	112	1,000
	BLR-31Y	2.51	94	865
	BLR-112Y	2.75	103	880
	Average	2.80	105	933
CHAROLAIS	JR-22Y	3.70	138	1,099
	JR-3Y	3.96	148	1,146
	JR-12Y	3.75	140	1,117
	JR-21Y	2.94	110	996
	JR-41Y	3.57	133	1,157
*P=Polled	Average	3.58	134	1,103
Station Average — Manitoba Test Station				
154 bulls		2.91	100	938
HEREFORD				
P632546	BGU-62Y	3.12	107	1,015
	BGU-15Y	3.14	108	923
	BGU-14Y	3.06	105	905
	BGU-37Y	3.43	118	934
	BGU-9Y	3.13	108	1,007
	Average	3.18	108	957
915686	CLT-2Y	2.75	95	967
	CLT-27Y	3.13	108	1,018
	CLT-19Y	3.12	107	1,048
	CLT-38Y	3.55	122	1,069
	CLT-55Y	3.44	118	1,000
	Average	3.20	108	1,020
ABERDEEN-ANGUS				
263802	FGG-214Y	3.31	114	949
	FGG-99Y	2.59	89	850
	FGG-258Y	2.99	103	920
	FGG-270Y	3.06	105	960
	FGG-219Y	3.25	112	1,179
	Average	3.04	103	972
SHORTHORN				
414760	LLH-3Y	3.00	103	840
	LLH-41Y	3.01	103	891
	LLH-10Y	3.13	108	883
	LLH-11Y	3.30	113	905
	LLH-2Y	3.02	104	887
	Average	3.09	105	881

The regulations require that young bulls be subject to an adjustment period of at least 14 days at the station before the start of the test period.

C/ THE SIRE PROGENY AND CARCASS APPRAISAL TEST

This test involves the feeding at central testing stations of sire groups of 10 castrated male calves from the approximate age of 205 days until slaughter. Carcasses are appraised for thickness of loin fleshing, depth of outside fat cover, conformation, and quality.

The following table illustrates the results of a test conducted at the Saskatchewan station and the kind of information which is made available to breeders. Such tests are conducted at several stations

across the country and at some of these feed conversion efficiencies are also compared.

In summary of the testing system the home herd test is designed to ensure accurate selection for growth rate of both male and female calves within the herd. The sire appraisal tests are designed to provide further comparative information on sires from different herds by appraisal of progeny performance in a common environment. The intent and purpose is to

ensure that improvement in the economic quality of the Canadian herd is directed along the surest possible course.

The selection of foundation cattle in Canada by foreign buyers is evidence of the growing awareness throughout the world that high performance in basic breeding stock is essential to the development of a successful beef enterprise and that the Canadian herd is one of the most economic and reliable sources.

TABLE III
†1967-68 SUMMARY OF BEEF SIRE PROGENY TEST RESULTS
Sire Group Averages

LIVE PERFORMANCE					CARCASS APPRAISAL				
No. of Calves	Daily gain (lbs.)		Weight at end of Test	Days of Age	* P.R.I. equivalents of Canadian measurements				
	Adjusted for age of dam	On feed			Warm Dressed Weight —lbs.	Carcass wt. per day of age—lbs.	Loin Area Sq. in.	Fat Cover Inches	Marbling Score
10	1.86	2.96	1,112	444	646	1.49	2.46	.08	8
10	2.09	2.49	935	397	529	1.36	2.18	.12	7
10	1.91	2.24	845	394	480	1.25	2.25	.10	8
9	1.81	2.28	779	369	439	1.22	2.19	.12	8
10	1.73	2.67	887	388	498	1.32	2.14	.11	8
9	1.69	2.92	935	397	529	1.36	1.99	.10	8
10	1.56	2.45	831	409	467	1.17	2.17	.11	8
10	1.59	2.77	862	396	489	1.27	2.19	.13	8
Stn. Avege.	1.78	2.59	899	399	510	1.30	2.20	.11	7.8

*—Performance Registry International

†—At Saskatchewan Central Test Station

ANIMAL HEALTH



Canada is free from serious livestock diseases including foot-and-mouth disease and rinderpest. The Animal Contagious Disease Act and Regulations provides controls designed to ensure that these diseases will never become established in the country. If they should appear, the Act provides for their eradication through immediate slaughter and quarantine procedures. Quarantine stations have been established at Levis, Quebec, and Saint John, New Brunswick, with a maximum security quarantine station on Grosse Ile in the St. Lawrence River. The latter station was established to handle cattle from greater risk countries.

Canada's national veterinary service covers the entire populated area. There are in the country approximately 2,000 veterinarians of whom 1,800 are active. The Health of Animals Branch of the Canada Department of Agriculture, with headquarters in Ottawa, employs 560 on a full-time basis. To complement the Health of Animals Branch veterinarians, there are veterinarians in private practice who ensure the Canadian farming community of up-to-date services and the advice necessary to maintain day-to-day animal health. About 800 of these veterinarians in private practice are employed by the Canadian government on a part-time or casual basis.

All cattle in the ten provinces of Canada have been tested for tuberculosis and brucellosis under

national eradication programs. The tests are conducted by veterinarians of the Canada Department of Agriculture. Reactors in these tests are slaughtered at federally inspected packing plants and compensation is paid to the livestock owners. When infection is uncovered in a herd, that herd is retested until the disease is eradicated.

In addition to on-the-farm testing, screening programs in the form of market cattle testing and brucellosis ring testing are carried out on a continuing basis. Under the Market Cattle Testing Program, cows 30 months of age and over and breeding bulls are identified by a coded backtag from which the herd of origin of each animal is identified. In the case of brucellosis, a blood sample is collected at the time of slaughter. In the case of tuberculosis, the presence or absence of tuberculosis lesions is recorded.

When, as a result of these screening programs, there is a suspicion of brucellosis or tuberculosis infection, the herd of origin is traced and submitted to a retest. All blood samples are tested at one of eight Federal Animal Pathology Division Laboratories located across the country. All post-mortem examinations are conducted by full-time meat inspectors at federally inspected plants.

As a result of these thorough and continuous herd and individual

animal tests the incidence of tuberculosis and brucellosis had been reduced by 1966 to less than .087 per cent and .2 per cent respectively.

Calfhood vaccination using Strain 19 vaccine has been carried out in Canada under a Federal-Provincial Calfhood Vaccination Program and has controlled and reduced brucellosis infection to a point where a national program for complete eradication could be established. With this reduction, vaccination of calves is no longer required in many areas. As a result, the number of calves vaccinated has decreased markedly and will continue to decrease as eradication progresses.

The incidence of Johne's disease in Canada is low. There is a voluntary herd testing program to assist owners in the elimination of the disease. Reactors to the tests are slaughtered.

All tests required by a country importing cattle from Canada are performed by government veterinarians with samples and specimens tested at a Federal Animal Pathology Division laboratory.

As a result of this application of veterinary science it is possible for even the most discriminating of world importers to buy from the Canadian herd with complete confidence in the health of their purchase.

BREED ORGANIZATION



The breeder of purebred cattle in Canada performs a distinct function. In contrast to the commercial cattleman who is primarily interested in the production of cattle for slaughter the breeder is concerned with the development of the high performance cattle which the modern beef enterprise demands.

The breed associations are primarily concerned with the development of their respective breeds and with the administration of registration. The activity of these organizations is controlled under the terms of The Livestock Pedigree Act in which the conditions

of formation, operation and the powers and responsibilities of breed associations are laid down. Under this Act any misrepresentation of ancestry, misuse of registration certificates, or the sale of unregistered animals as purebred animals is punishable by fine or imprisonment.

With the exception of the Charolais herdbook all beef breed books in Canada are closed. The Hereford, Aberdeen-Angus, Shorthorn, Galloway and Highland breeds are registered through a central organization located in Ottawa—the Canadian National Livestock Records. The Canadian Charolais As-

sociation conducts registration and maintains its book of record in the association head office at Lacombe, Alberta.

The Canadian Hereford Association maintains its own sales agency and the Canadian Aberdeen-Angus Association plans to have an association sales agency established by 1969. The other breed associations do not enter into sales contracts. However, all associations are well equipped to advise buyers and work with competent livestock exporting firms in handling export orders. The addresses of the Canadian associations are listed in the last page of this brochure.

EXPORT TRADE SERVICES



Canadian government trade representatives are located at all Canadian Embassies and High Commissions throughout the world. These officers welcome inquiries and are prepared to offer sound advice on trade facilities, recommend contacts within the Canadian industry and make travel arrangements.

The centres of Canada's beef cattle population are serviced regularly by modern world airlines. Arrangements can be made through trade offices to have competent export representatives meet buyers and

visitors and arrange itineraries to suit their needs. If interpreters are necessary, they also can be provided. In company with these knowledgeable guides it is possible to see within a day a number of the finest beef cattle in the world. If cattle of a specific age or breeding are of interest it is possible to see a wide selection in all price ranges without excessive travel.

International banking and insurance facilities, animal health inspection services, and livestock

transport and documentation services are all immediately available. Canadian exporters are prepared to move cattle to any accessible point in the world. Air transport is often preferred for particularly valuable cattle but shiploads of high quality breeding stock move regularly to international markets.

LIVESTOCK EXHIBITIONS



Since the early years livestock shows have been significant events for the Canadian beef cattle breeder. The comparison of selected beef animals and groups of animals in terms of type and size has offered guidance in the development of these characteristics. In more recent years the method of show ring appraisal has changed to place the major emphasis on the economic factors of beef production. Special classes now available at most exhibitions are being used to emphasize utility rather than eye appeal alone. Performance standards will soon be a

prerequisite for entry in all beef breeding classes. Growth rates and yield of properly finished beef are being recognized as key factors; a concept of greater skeletal size with good covering muscle is replacing the old concept of a short, blocky animal. In many cases the winner of market cattle classes is not determined until after the cattle have been slaughtered and the carcasses appraised. Carcass classes are now a part of all leading livestock shows. The use of ultrasonic equipment in the more accurate appraisal of the depth of fat and muscle on breed-

ing stock shows promise of making possible a more practical and realistic selection of champions than has been previously possible.

These changes are the result of demands for greater economic efficiency; of a demand for, not only opinion, but for proof of performance. Canadian show standards have changed in accord with these demands and as a result still make a significant contribution in the development of better cattle in Canada.



THE CANADIAN

HEREFORD

Herefords were first imported into Canada in 1860. There was a need to develop a kind of beef animal that was hardy, prolific, and able to graze wide areas efficiently. From the original imports only those strains which carried the necessary vigour and hardiness survived. From this foundation the modern Canadian Hereford has been developed.

There are currently more than 10,000 breeders of registered Herefords in Canada who produce approximately 35,000 bulls annually for use in domestic commercial herds and for export.

The current overwhelming popularity of the Canadian Hereford is sound testimony of its adaptability and usefulness. Registration rate for recent years is presented in Table IV.

TABLE IV

Registration 1966-67

1966	1967
56,154	56,450

In addition to these purebred cattle, many large herds of straight-bred but unregistered cattle are

excellent sources of high performance and practical female stock. In recent years exports have been made to the United States, the U.S.S.R., Chile, Colombia, Cuba, Britain, Japan, Mexico, Peru, Romania, and Brazil.

Of particular interest to Hereford breeders the world over has been the development of an outstanding naturally hornless strain in Canada. The great size and excellent performance of these cattle have placed them among the most sought-after beef cattle in the world. An ever-increasing proportion of both show ring and performance test winners in Canada are of the polled strain.

The average growth rates of Canadian Hereford calves under herd test is presented in Table V.

The characteristics for which the Canadian Hereford is most noted are:—

- (1) Natural hardiness and excellent foraging ability over wide areas and rough terrain.
- (2) Unusual adaptability to a variety of climatic and forage conditions.
- (3) Ability to produce a carcass of desirable finish at an economic weight and age.
- (4) Ability to reproduce effectively with a minimum of care, attention, or calving difficulties.

TABLE V

Average performance of male Hereford calves under herd test—1967

160 - 250-day age group *(lbs. per day)

	No. of Calves	Adjusted average daily gain Top 1/3 of group	Adjusted average daily gain Entire age group
Pre-weaning	3,633	2.29	1.93
Post-weaning (168 days)	2,949	2.57	2.04

*Adjusted for age of dam



THE CANADIAN

ABERDEEN-ANGUS

The first breeding herd—including animals of both sexes—to be imported to North America was brought to Canada, from its native Scotland in 1876 by Professor William Brown of the Ontario Agricultural College. It was not long before the progeny of these early Aberdeen-Angus imports attracted interest and other shipments followed. Breeders were impressed with their longevity, hardiness and their ability to produce high quality beef. These qualities have been the prime factors in the development of the breed in Canada. The Aberdeen-Angus now ranks second in popularity among the Canadian beef breeds.

TABLE VI

Registration per year

1966	1967
17,534	17,287

The Canadian Aberdeen-Angus is particularly noted for its ability to produce a high quality carcass. These carcasses have been consistent winners at major carcass competitions held across the country. During the past five years Aberdeen-Angus carcasses have dominated the carcass competition at the Royal Agricultural Winter Fair (Canada's finest fair) winning Grand Champion every year. Desirable conformation and excel-

lent marbling are two of the major factors involved in this outstanding performance.

These qualities along with good mothering ability have made the Aberdeen-Angus a popular breed for crossing. Among the more favourable crosses are the Angus-Hereford, Angus-Charolais and Angus-Brahman or Brangus. The Charolais and the Brahman have a significant positive effect on the rate of gain of the Aberdeen-Angus and the Aberdeen-Angus contributes increased milk production as well as desirable carcass qualities. Aberdeen-Angus bulls are gaining in popularity in crossing with first calf dairy heifers to permit breeding at a younger age. The Angus crosses like their Aberdeen-Angus parents are naturally hornless which is an extra attraction.

TABLE VII

Average performance of male
Aberdeen-Angus calves under herd test — 1967.
160 - 250-day age group *(lbs. per day)

	No. of Calves	Adjusted average daily gain Top 1/3 of group	Adjusted average daily gain Entire age group
Pre-weaning Period	1,181	2.31	1.92
Post-weaning Period (168 days)	913	2.35	1.88

*Adjusted for age of dam

The Canadian Aberdeen-Angus Association has recently developed a type classification system. The format of their classification is divided equally into two main sections, general appearance and beef character with subdivisions in each. Points are allotted to the subdivisions indicative of the rela-

The Canadian

ABERDEEN-ANGUS

tive value of each. The concept of type classification is to promote breed uniformity as well as provide the breeder with a guideline to select and improve. Classification must at all times keep both correct type and economical aspects in mind in order to play a part in breed improvement.

Although the U.S. is the major ex-

port market for the breed, recent exports to Japan, Cuba, Argentina and the U.S.S.R. have signified rising interest in the Canadian Aberdeen-Angus. The performance of these larger, hardier animals along with that of their progeny will decide the extent of future exports.

Some of the characteristics for

which the Canadian Aberdeen-Angus is most noted are:

- (1) Outstanding ability to yield a carcass of superior conformation and exceptionally well-marbled muscle.
- (2) Ability to produce a desirable weight carcass at an early age.
- (3) Natural resistance to sunburn, cancer eye, and snow blindness.
- (4) Naturally hornless.



THE CANADIAN

SHORTHORN

Shorthorn cattle originated in northeastern England in the counties of Northumberland, Durham, Yorkshire and Lincolnshire. The early part of the 19th century saw the first importations of Shorthorns to Canada. The performance of these animals along with their progeny, led to subsequent importations and provided the basic seed stock for the Canadian Shorthorn.

The breed has a wide range in colour. Roans (blended red and white hairs) are perhaps most numerous, although Shorthorns may be red, white or any combination of red and white. Of all the beef breeds, the Shorthorn excels in ability to feed a calf well, a factor which has been instrumental in making it extremely popular for crossing with breeds of lesser milk producing ability. The Shorthorn is noted as well for early maturity and good temperament which is a valuable asset in both pasture and feed-lot performance.

There are in Canada, essentially two strains of Shorthorns

- (a) Beef type — horned and polled
- (b) Milking or dual purpose type

Although the two strains are registered in the same herd book, they are two distinctly different types of cattle. This booklet is oriented toward the beef type and it is essential that foreign buyers know that in the development of the beef Shorthorn the milking ability of the dam has always been emphasized. This is one of the strongest factors influencing the weaning weights of calves.

Genetic mutations and selectivity have led to the development of a polled strain and these animals are endowed with the same distinct Shorthorn characteristics.

TABLE VIII

Registration per year

1966	1967
9,496	9,454

The registrations include milking Shorthorns. Because of its dual purpose properties the milking Shorthorn was always very popular on small family farms. With the disappearance of these small holdings the milking Shorthorn has given way to the more highly specialized dairy breeds and this

change accounts for the decline in the total number of registrations per year.

The Canadian Beef Shorthorn bull is one of the most popular for use in crossing programs and in the improvement of native herds. Faster growth and heavy fleshing are the characteristics of progeny along with a stronger ability in crossbred females to feed calves well and efficiently.

Canadian Shorthorn breeders are proud of the fact they were the first beef cattle breeders in the world to adopt a standard type classification program. There are now more than 7,000 animals classified, and breeders have profited by using this standard as a guideline to their breeding and selection programs.

In setting up standards to be used in type classification the Shorthorn Association has stressed those properties associated with efficient beef production as well as traditional eye appeal.

Analysis of males or females according to the standards set in the Type Classification Score card

The Canadian

SHORTHORN

will designate the animal by points as one of six classes.

Class AAA — 90 points or more
Class AA — 80 to 89 points
Class A — 70 to 79 points
Class B — 60 to 69 points

Class C — 50 to 59 points
Class D — below 50 points

Although the majority of Shorthorn exports have been confined to the U.S., small shipments have found their way to Mexico and Cuba.

With the world shortage of animal protein and the need for an animal which will cross well with native stock, the Canadian Shorthorn is ensured of increasing popularity in the future.

Some of the characteristics for which the Canadian Shorthorn is most noted are:

- (1) Outstanding ability to feed and wean a heavy calf in relation to the dam weight.
- (2) Outstanding ability to reach top market condition at an early age.
- (3) Docility in confinement which facilitates handling and allows for easier gains on feed.
- (4) Unusual hardiness and ability to perform well under primitive conditions and cold climate.

TABLE IX Average performance of male Shorthorn calves under herd test—1967 160 - 250-day age group *(lbs. per day)			
	No. of Calves	Adjusted average daily gain Top 1/3 of group	Adjusted average daily gain Entire age group
Pre-weaning Period	478	2.25	1.91
Post-weaning Period (168 days)	356	2.68	2.14
*Adjusted for age of dam			



CHAROLAIS

IN CANADA

The first recorded shipments of Charolais to North America were made in 1930, 1931 and 1937, to Mexico. During the 20 years from 1936 to 1956 approximately 40 bulls were moved from Mexico into the United States. By use of an up-grading program or the repeated breeding back of crossbred females to pure bulls and recording the mating and offspring it was possible to develop an essentially pure Charolais strain which formed the base of the Charolais breed in North America. The growth rates which these large cattle exhibited

as calves, attracted immediate attention and was one of the factors which led to a complete reappraisal of Canadian beef production economics in the late 1950s. In January 1965, the Canadian Government announced that because of improved testing techniques and the relatively sound health situation in France it would permit the importation of limited numbers of unvaccinated pure seed stock from France. These cattle would be subject to a most exacting series of tests during quarantine and would be released

only when complete freedom from foot-and-mouth disease could be assured. To date three shipments totalling 541 head of bulls and females have been imported. At the time of writing, these animals and their female offspring are under export control.

Registrations and recordations were in 1966 — 3,102 and in 1967 — 3,720.

An up-grading program is available to Canadian breeders and it is felt that ultimately by wise selection and rigid culling it will be possible to develop a strain of Charolais in Canada which can make a significant contribution to efficiency in beef production. There is little doubt now that the offspring resulting from the use of Charolais sires on native Canadian Herefords, Angus and Short-horn females demonstrate superior growth rates and if fed early in life, possess desirable carcass characteristics.

The average growth rates of Charolais under herd test in Canada 1967 are presented in Table X.

TABLE X			
Average performance of male Charolais calves under herd test—1967			
160 - 250-day age group *(lbs. per day)			
	No. of Calves	Adjusted average daily gain Top 1/3 of group	Adjusted average daily gain Entire age group
Pre-weaning Period	174	2.96	2.64
Post-weaning Period (168 days)	89	2.91	2.47
*Adjusted for age of dam			

OTHER BREEDS



GALLOWAY

Galloway cattle are used in Canada on particularly rough terrain and where grazing is sparse. Registrations are presented in Table XI.

Test figures are limited and be-

cause the number on test has been small the averages are of doubtful reliability. The breed has been developed for use in particularly difficult conditions and has built a reputation for tender and flavourful beef.

TABLE XI

Registration per year

1966	1967
631	547

HIGHLAND

Highland cattle in Canada are very limited in number. The breed is

reputed to possess exceptional hardiness and is being tested in

various environments in Canada at the present time.

BREED SUMMARY

In summary it may well be stated that each of these breeds of cattle have unique qualities which make them appropriate for use under specific environmental and market conditions.

Success in beef production is achieved by the use of that kind of animal which will harvest and convert the available forage resource effectively, reproduce effectively, and yield in the end a product which best suits the requirements of the human population which it serves. The

pure breeds are widely adaptable but it is not unrealistic to think in terms of combinations of breeds and of characteristics. Whatever approach is taken it is imperative that the genetic material used at the outset be well chosen. Its influence will be felt throughout the life of the enterprise. Canadian breeders offer the results of many years of selection based on sound practical judgment, scientific principles and, above all, the need for economic efficiency in the total enterprise from conception to carcass.

Canadian Beef Cattle Breeding Associations

The Canadian Hereford Association
1706 First Street Southeast
Calgary, Alberta, Canada

The Canadian Aberdeen-Angus Association
P.O. Box 663
Guelph, Ontario, Canada

The Canadian Shorthorn Association
Grummer Building
Guelph, Ontario, Canada

The Canadian Charolais Association
4816 MacLeod Trail
Calgary 6, Alberta, Canada

The Canadian Galloway Association
P.O. Box 40
Webb, Saskatchewan, Canada

The Canadian Highland Cattle Society
P.O. Box 777
Duncan, British Columbia, Canada



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