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New sheep breeds in Canada



Canada

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Cover illustration

Artist's conception of Romanov, Coopworth, and Booroola Merino sheep now available in Canada.

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INTRODUCTION

In the last two decades five new sheep breeds were successfully introduced into Canada. Three of these breeds, namely Finnsheep (Finnish Landrace), Romanov, and Booroola, were imported for their superior prolificacy. Well-fed and managed ewes from these breeds can easily average three lambs per litter. These breeds have a long breeding season of about 8 months, so accelerated systems of lambing are possible. Prolificacy in the Finnsheep and Romanov is a quantitative character controlled by undetermined number of genes, whereas in the Booroola it is controlled by one dominant gene. In Canada, the three prolific breeds can be raised pure or crossed with local breeds to produce prolific first crosses.

The Coopworth and Polypay are two composite, dual-purpose breeds developed recently by crossing existing breeds and selecting for specific characters. Coopworth animals produce heavy fleeces of good spinning quality and are moderately prolific. The Polypay is characterized by good prolificacy, wool production, out of season breeding, and early maturity.

This booklet presents these five breeds to Canadian breeders; it gives a brief account of the attributes of each breed and what each can offer to the Canadian sheep industry.

Origin

The Romanov breed originated in Russia in the 18th century, presumably from a cross between males imported from Silesia in 1720 or Holland in 1754 and females from a local breed. Some Russian scientists claim that the breed was developed by selection over many years of a short-tailed Nordic breed and that no foreign breeds were involved. The Romanov takes its name from a small town in the Volga valley, northeast of Moscow. The population of Romanov in the Soviet Union was reported at 456 000 in 1985.

Importation into Canada

Romanov were first imported by Agriculture Canada in 1980. Of 7 rams and 16 ewes imported from France, 5 rams and 14 ewes were released from quarantine. France had imported some Romanov from the Soviet Union starting in 1964.

Description

Color The lambs are born black. Later they turn gray as their wool becomes a mixture of black and white fibers. The head remains black and bears a characteristic white spot high on the forehead.

Head The head is small and angular, with a rounded poll. The ears are upright and mobile. The eyes are voluminous. The males, with or without horns, have a more convex forehead than the females and the head is wider and shorter.

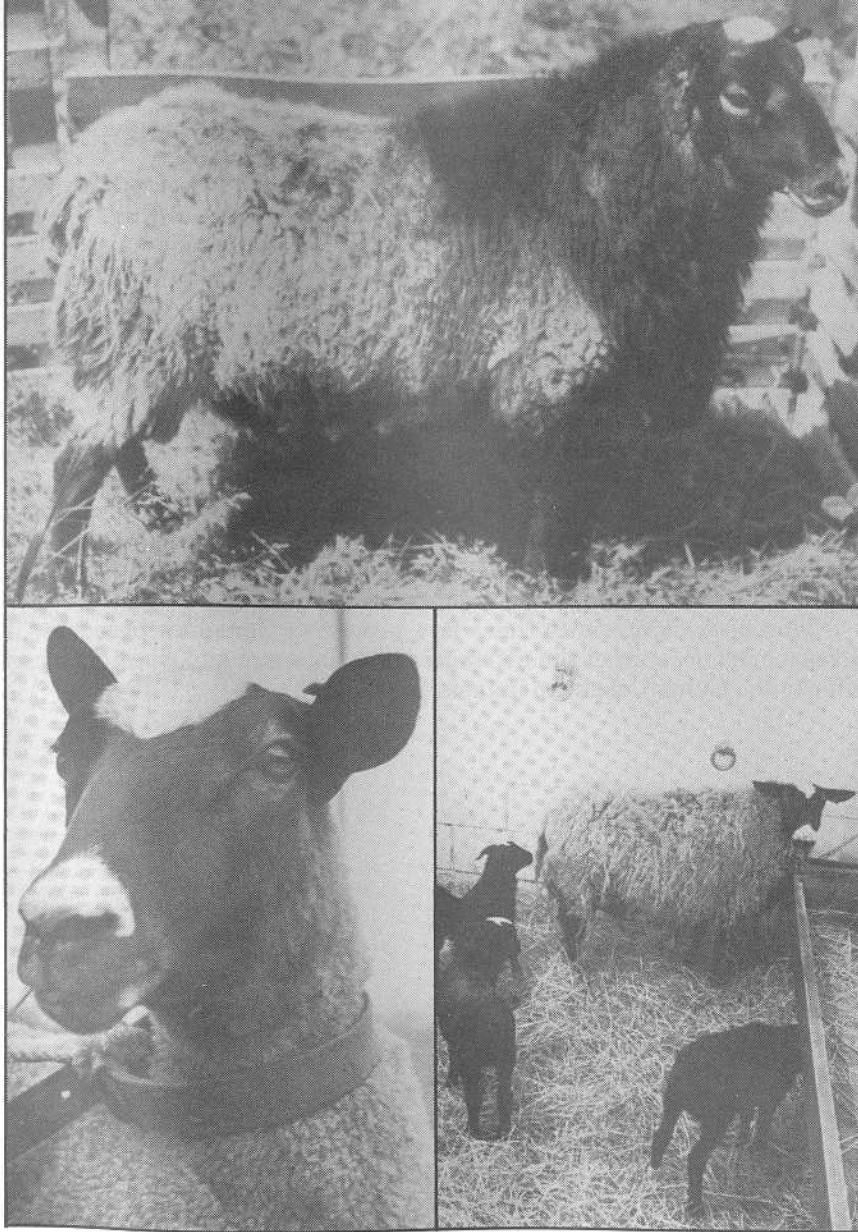
Neck In males, the long, narrow neck is covered with a hairy black mane that extends to the brisket.

Body The body is of medium size; the ribs are rounded. Romanov animals stand high on their legs. The average body weight of mature ewes is 50 kg; that of mature rams is 70 kg.

Legs The long, fine legs are covered with short hair.

Tail The tail is short and characteristically pointed.

Wool cover Lambs are born with a pelt-like black cover similar to that of Karakul sheep but inferior in quality. The coat turns gray gradually as they develop two types of wool fibers. The fine inner coat is of white fibers and the coarse outer coat is of black kempy fibers in the ratio of 1:4–1:5.



Top. A Romanov ram.

Bottom left. A Romanov ewe.

Bottom right. A Romanov ewe and lambs.

Reproduction

Sexual maturity Sexual maturity is early in the Romanov. Males can mate at 3–4 months of age; some ewes in Canada lambed at 9 months of age. Well-fed females can reach 40 kg liveweight in 6–8 months and can be bred at that age. In Canada, first lambing occurred at 372 days, when ewes averaged 46 kg in weight.

Longevity The average number of reproductive years in the herd is 7.5 years. Mortality in adult ewes was estimated at 10–11% for ewes kept in confinement and 4–8% for those kept on ranges in the Soviet Union.

Breeding season The Romanov breed is characterized by an extremely long season of sexual activity. In many ewes no anestrus period can be detected at all. Ewes return to estrus 30–40 days after lambing, and intensive breeding systems are possible with Romanovs.

Gestation length The length of gestation is a few days shorter than other breeds, averaging 144 days (range from 139 to 149 days).

Age at first lambing Most Romanov flocks are managed to lamb for the first time at 12 months of age.

Fertility The high fertility (more than 95%) in Romanovs during the normal breeding season (September to March) reduces to about 50% during the summer.

Litter size Prolificacy is by far the most important characteristic of Romanov sheep. In the Soviet Union, the average number of lambs born to 100 ewes ranges from 184 to 320 lambs in the different flocks depending on their condition. Some ewes give birth to seven or even nine lambs. In France, where management conditions are better than in the Soviet Union, the Romanov gave even better results. In six flocks involving about 1400 births, prolificacy was 2.69 lambs for adult ewes and 2.07 for yearlings. In Canada, the average prolificacy of adult ewes ranged between 2.9 and 3.5, whereas it was 2.1 for yearlings.

Lamb mortality Lamb mortality depends greatly on management and may be as high as 50% in badly managed flocks. In the Soviet Union, preweaning mortality is 6.7–13.7% in flocks averaging two lambs per ewe. In France, although the preweaning mortality was estimated at 13%, the average number of lambs weaned per ewe was 2.7. In well-managed herds preweaning mortality was recorded at only 7%.

Production

Lamb weight Lamb weight at birth and weaning is greatly influenced by the number of lambs born in the litter. The average in the Canadian study was 2.9 kg. Birthweight in other countries varied between 2.4 and 2.5 kg; weight of lambs at 70 days was 20 kg for males and 18 kg for females. Average daily gain (ADG) between birth and weaning was 230 g in the Canadian flock.

Meat production Dressing percentage varies with age and feeding conditions. In lambs 7–8 months old, a dressing percentage of 49% could be expected. The high-priced cuts represent 60–70% of the carcass. It is estimated that 80% of the carcass is edible meat. In three studies in Canada dressing percentage of noncastrated males ranged between 43 and 52% according to slaughter weight.

Carcass quality Romanov carcasses are relatively heavier in the front, shoulder cuts represent 38–40% of the carcass compared with 33% for leg and 27–29% for loin-rack cuts. Internal fat is about 3–4% in noncastrated males, 5% in castrated males, and 7% in females according to Canadian studies.

Milk production In the Soviet Union, the lambs are left with their dams until weaning. During a lactation period of 100 days, ewes produce 110–160 kg of milk with 6.3–7.4% butterfat. Maximum milk production is attained at the 15th day of lactation and is highest in 6–7-year-old ewes. A recent study in the United States reported a 130-day production of 39 L of milk containing 6.4% fat, 6.1% protein, and 4.8% lactose. Some lines in the Romanov possess four functioning teats.

Wool production Grease fleece weight of Romanov lambs, shorn for the first time at 7–9 months of age, was 1.1 kg; those shorn at 10–12 and 13–15 months clipped 1.9 and 2.2 kg, respectively. Mature ewes shear between 2.2 and 2.5 kg for 12-month growth according to studies conducted in Canada. In the Soviet Union, Romanov shear around 1.8 kg.

Fiber characteristics Romanov fleeces are a mixture of fine, white, inner coat and coarse, black, outer coat. The combination of the two types of fibers gives Romanov sheep their gray appearance.

Specific attributes

Flocking tendency Animals on pasture usually stay together and can easily be handled.

Mothering ability Ewes are known for their high milk yield and the excellent care they give to their young. Romanov crosses are also remarkable in their mothering ability.

Presence of horns Romanov are hornless. However, some rams may have small horns.

Temperament Some breeders claim that some animals of this breed are extremely nervous, others claim the opposite. Romanov sheep can jump high and require higher fences to contain them.

World distribution

Soviet Union, Hungary, Czechoslovakia, France, Spain, Portugal, Italy, West Germany, Egypt, Israel, Tunisia, Algeria, Canada, South Africa, and the United States.

Contacts

In Canada: Agriculture Canada Research Stations
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In France: Unité Nationale de Sélection et de Promotion des Races
Finnoise et Romanov
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Tel. 49-91-10-78.

FINNSHEEP (FINNISH LANDRACE)

Origin

The Finnsheep breed is related to other Scandinavian short-tailed sheep. It is believed to have descended from Mouflon, which still lives in Sardinia and Corsica.

Importation into Canada

Finnsheep were first imported by the University of Manitoba in 1966. The foundation stock consisted of four rams and eight ewes obtained from Scotland, which in turn had been imported from Finland in 1962. Since then, larger numbers have been imported.

Description

Color Finnsheep are usually white; however, some animals may be black and occasionally gray, brown, and even piebald or skewbald. Black and gray sheep commonly have white spots on head and legs. Lambs black at birth turn gray as they grow. A few Finnsheep have black-pigmented hooves.

Head The head is narrow, free of wool but covered with hair. The nose is straight. The ears are narrow, erect, and rather short; they are set horizontally but generally point upwards. Both sexes are hornless but a few rams may have light horns.

Neck The neck is rather long and narrow.

Body The body is moderately muscled and rather long and narrow. The bones are usually long and light-to-medium in thickness. The body stands high from the ground. Bodyweight of ewes at 1, 2, and 3 years of age averages about 33, 47, and 55 kg, respectively. In Finland, mature ewes and rams weigh between 70–80 and 90–110 kg, respectively. In Canada they were 66 and 86 kg, respectively.

Legs Long, bony, thin legs are covered with guard hair. Ewes have neat, well-shaped feet.

Tail The short tail averages 7.8 cm in length, consists of 10–12 vertebrae, and is covered with short hair. It is rather wide at its base but tapers towards its end.

Wool cover Head and legs are generally free of wool. Wool is usually of mixed composition. Some individuals have either only underwool or only guard hair.

Reproduction

Sexual maturity Finnsheep, like Romanov, mature early. In Britain, age at puberty was calculated at 210 days for ewes weighing 33 kg. Some lambs reach maturity at 5 months of age. Fertile matings of ewe lambs have occurred at less than 4 months.

Longevity Finnsheep ewes have been found to have a longevity 11% less than Suffolk or Targhee ewes (56 vs. 63 months). In crosses of Finnsheep, however, longevity was similar to that in crosses of other domestic breeds under intensive systems.

Breeding season The breeding season of Finnsheep ewes is about 230 days. Ewes start their breeding season around the end of August and average between 15 and 17 estrous cycles by breeding season; in July and August most ewes are in deep anestrus. Because the breeding season is long, two lambings per year are possible. In Finland, 45% of the ewes lambed twice per year.

Gestation length Length of gestation is slightly shorter than in British breeds at an average of 143 days (136–150 days).

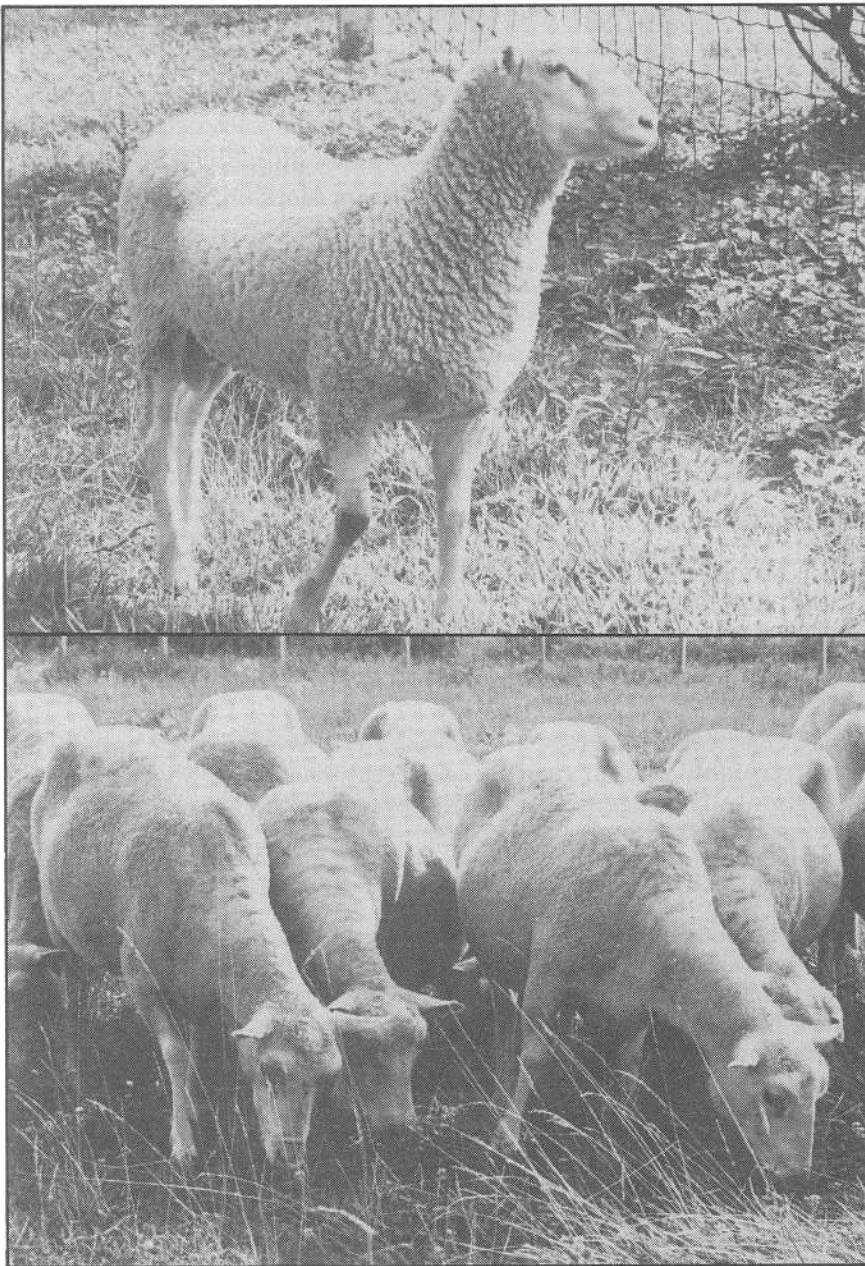
Age at first lambing Most Finnsheep can lamb at 12 months of age. The average age of 378 days (342–422 days) at first lambing was reported for yearlings in Finland.

Fertility Studies showed that fertility in Finnsheep is relatively low in out-of-season breeding. In two studies in Holland and the United States, fertility was estimated at 70 and 71%, respectively. In Canada, fertility of ewes was 85% and of yearlings 71%. In season, fertility was found to be 94–96% for yearlings and 95–98% for adult ewes in an American study. In Finland, fertility was reported at 97–98% and in Norway at 93%.

Ovulation rate and litter size Ovulation rate of mature Finnsheep was reported at 3.37; for young ewes it was 2.53. In a Canadian study, ovulation rate of 3.42 and litter size at birth of 2.86 were observed. Studies in Finland and Canada showed that average litter size of yearling and older ewes were 1.9 and 2.8 lambs, respectively. In Britain 2- and 3-year-old ewes gave birth to 3.0 and 3.4 lambs, respectively. In Norway, litter size averaged 3.1 lambs.

Lamb mortality In Finland, 5–6% of the lambs die at birth, and a further 4–5% die within 3 days of birth. In other countries, mortality at birth can be as high as 44%. In Canada, preweaning mortality of Finnsheep was 23%. In two studies in the United States, 32 and 11% of the lambs born died before weaning.

Economic productivity In two studies conducted in the United States and Canada, economic returns from pure Finnsheep exceeded those



Top. A Finnsheep ram.

Bottom. Finnsheep ewes on pasture.

both from standard breeds and from crosses of standard breeds with Finnsheep.

Production

Lamb weight Birthweight of lambs varies according to size of litter. In Canada, average birthweight was 2.6 kg for lambs born in litters averaging 2.9 lambs. Seventy-day weaning weight of lambs was 15.4 kg. In Finland, liveweight at 60 days of age was 20 kg and at 150 days of age, 45 kg. The average gain of 284 g/day is higher than the 204 g/day found in a Canadian study. Finnsheep lambs needed 4.5 kg of feed for each kilogram of gain.

Meat production Dressing percentage of lambs slaughtered at 36 kg liveweight was 45.4%; for those slaughtered at 26 kg it was 47.7%. Leg comprised 31.4% of the carcass. In a Finnish study, Finnsheep rams between 60 and 150 days needed 4.05 kg of feed for each kilogram of gain.

Carcass quality Finnsheep carcasses are similar to other breeds in lean content (43% according to a Canadian study) but show smaller loin-eye area. Finnsheep usually deposit more fat in the body cavity around the kidneys than other breeds (18.6 g per kilogram of carcass weight compared with 10 g for Suffolks). Carcasses often lack proper fat cover and accordingly grade lower than other breeds.

Milk production A recent American study indicated that milk production of Finnsheep ewes was 64 L during a 130-day lactation period. Milk composition was 5.7% fat, 5.5% protein, and 4.8% lactose. Many Finnsheep ewes have more than two teats.

Wool production Sheep are usually shorn in spring and autumn. Ewes produce annually about 2.8 kg of wool and rams 3.8 kg. Good animals can shear up to 6 kg.

Fiber characteristics Finnsheep wool has a staple length longer than, or comparable with, other long-wooled breeds, with a fiber diameter of 25–28 μm . Fibers are medium in fineness (50–54 μm), particularly lustrous, elastic, soft, light, and firm. Kemp and medullated fibers are rare. Finnsheep wool has good felting characteristics.

Specific attributes

Flocking tendency The tendency to flock of Finnsheep is greater than in most British mutton breeds but is less developed than in range sheep.

Mothering ability Lambing is easy in Finnsheep, and ewes nurse their lambs well.

Presence of horns Finnsheep are hornless, but a few rams have light horns.

Temperament Finnsheep are quiet animals and are easy to handle.

World distribution

Finnsheep have been introduced to more than 40 countries worldwide.

Contacts

In Canada: Canadian Finnsheep Breeders' Association
Dale Swinton, Sec.
P.O. Box 7, Perth Road Village
Ontario K0H 2L0
Tel. (613) 353-1079

In Finland: The Finnsheep Breeders' Association
Lönnrotinkatu 13, 00120 Helsinki, Finland

In the United States:
Finnsheep Breeders' Association, Inc.
Claire H. Carter, Sec./Treas.
P.O. Box 512, Zionsville, IN 46077-0512, USA
Tel. (317) 873-3597

Origin

The Booroola sheep originated in the early 1940s, probably by the mutation of a gene in a private Merino flock on a farm called Booroola in New South Wales, Australia. The Australian Ministry of Agriculture concentrated the breeding of animals carrying the fecundity gene and established a new strain of prolific Merino called Booroola Merino. The fecundity gene was later transmitted to other breeds by crossbreeding. The term Booroola is now applied to animals of any breed carrying the gene.

Importation into Canada

Booroola Merino embryos implanted in surrogate ewes were imported by Agriculture Canada in 1985. The embryos resulted in 15 ewe and 16 ram lambs born in 1986. In addition five Booroola rams were imported.

Description

Color Booroola Merino sheep are white.

Head The head is medium to short. The rams are masculine and most have well-developed horns. Ewes are hornless and are more refined about the head than the rams. The hair on the face and ears is white and of fine quality. Wool may cover the face in some animals.

Neck The neck is rather short. In some animals the skin is loose and forms wrinkles.

Body The body is small, narrow, and low. Weight of ewes at 1, 2, and 3 years of age was reported at 38, 47, and 50 kg, respectively. Mature rams weigh 65–90 kg and mature ewes weigh 55–65 kg.

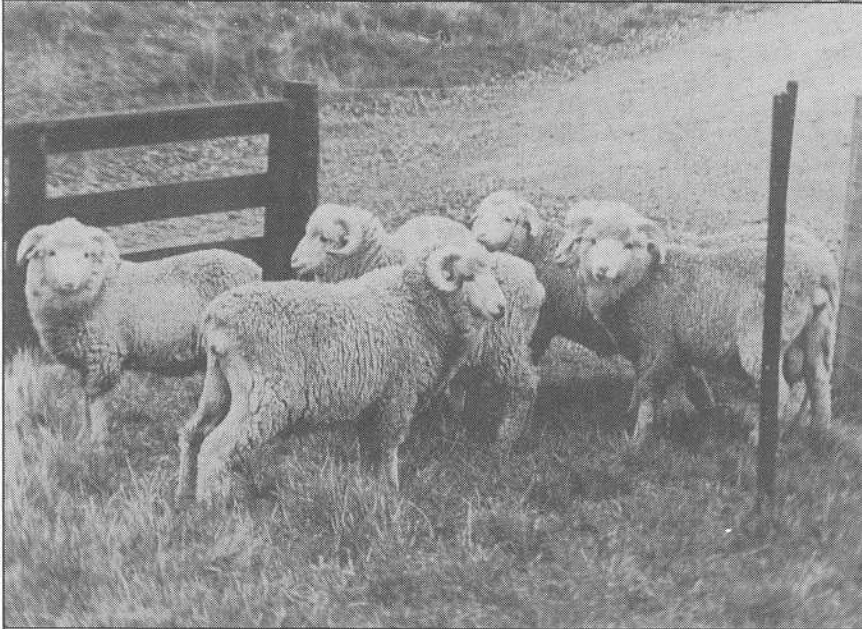
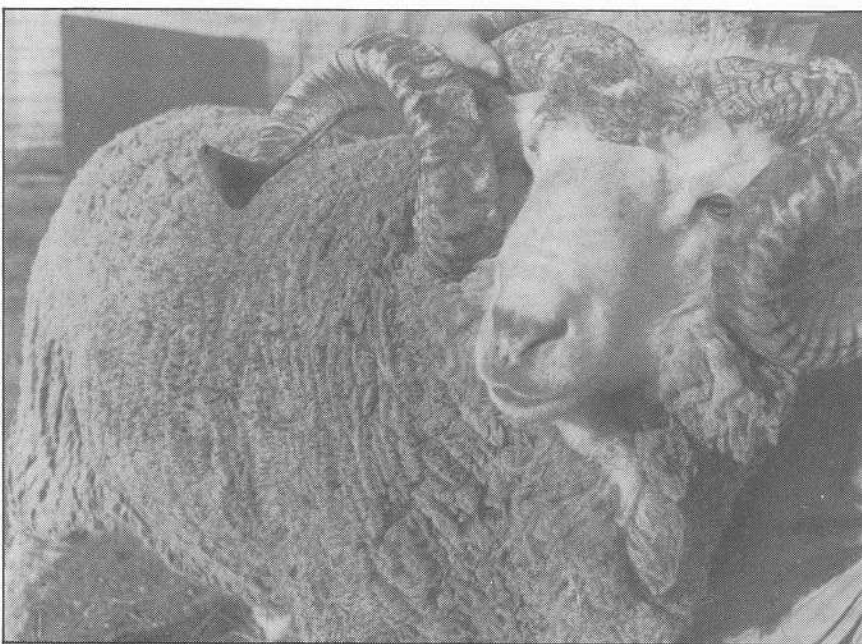
Legs The legs are relatively short. They are covered with wool down to the hooves.

Tail The tail is long and narrow.

Wool cover Fine wool covers the whole body and parts of the legs and face; some animals are wool blind.

Reproduction

Sexual maturity Booroola Merino, like the other Merino strains, is characterized by late sexual maturity. Age at puberty was reported at



Top. A Booroola ram.

Bottom. The Booroola rams imported from New Zealand.

413 ± 12 days. It was reported that less than 10% of the females reach puberty at 1 year of age. Ewe yearlings can be mated at 1 year of age if they weigh around 30 kg, but fertility at that age is not high.

Breeding season Booroola Merino ewes are characterized by a long breeding season that extends for 8 months. During a 12-month period, Booroola ewes showed on average 9.8 estrous cycles. Sixty percent of Booroola ewes ovulate in all months of the year.

Age at first lambing The common practice with Booroola ewes is to breed them at 18 months of age to lamb when they are about 2 years old.

Postpartum Forty days after lambing, about 3% of the lactating and 18% of the nonlactating ewes resume ovulation.

Fertility Fertility of Booroola Merino and Booroola crosses is about 90%. In Canada, fertility in Booroola ewes aged 18 months and older was 70–75%.

Ovulation rate and litter size According to an Australian study, about 65% of the ewes ovulate three to five ova, 23% ovulate one or two ova, and 12% ovulate from six to nine ova. The mean ovulation rate is 3.7 compared with 1.4 for the regular type Merino. Average litter size of Booroola ewes is reported at 2.3 (1–7) with 40% of litters being 3 or more. In a study in New Zealand, litter size of Booroola was 2.1 whereas that for Merino was 1.4. In Canada, litter size at birth for ewes aged 18 months and older was 2.7 lambs. The percentage of ewes lambing quadruplets and triplets was 23 and 35%, respectively.

Lamb mortality Lamb mortality at birth is greatly influenced by litter size. In litters of 1, 2, 3, 4, 5, and 6 lambs, mortality was 10, 23, 45, 63, 70, and 72%, respectively. On average, mortality rate is about 38% compared with 15% for Merino. Lamb mortality is higher in 2-year-old ewes (46%) than in older ewes (28%).

Production

Lamb weight Lamb birthweight varies with the number of lambs born in the litter, from 3.9–4.8 kg for single lambs to 1.9–2.6 kg for quadruplets (2.9–3.7 kg and 2.2–3.1 kg for twins and triplets). Weaning weight of Booroola lambs at 70 days of age was 13.5 kg in Canada and around 19 kg at 84 days of age in Australia.

Meat production Lambs slaughtered at 35 kg liveweight dress 47.8%. The area of loin-eye muscle in lambs slaughtered at 24 and 38 kg liveweight averaged 8.3 and 11.8 cm², respectively.

Carcass quality The carcasses are shorter than in other sheep breeds (56 cm for 15-kg carcass) with chest depth of 25.6 cm and back-fat

depth of 57 mm. Booroola crosses with other Merino strains gave greater depths of fat, according to an Australian study.

Milk production Studies have shown that when Booroola ewes were left with three or more lambs most of the lambs died, which may indicate low milk production. Merino ewes raising twins and single lambs were reported to produce, respectively, about 100 and 70 kg of milk during a 70-day nursing period.

Wool production Grease fleece weight of ewes raising one lamb is about 4.7 kg, whereas for ewes raising three lambs it is 4.1 kg. Clean scoured yield is about 70%.

Fiber characteristics Fiber diameter varies between 19 and 26 µm; staple length varies between 9.1 and 10.4 cm.

Specific attributes

Flocking tendency Booroola, as a Merino strain, has a strong flocking tendency.

Mothering ability Mothering ability is relatively poor in Booroola Merino. Milk production is often inadequate to feed a large litter, and no more than two lambs on the mother are recommended.

Presence of horns Males have big round horns, which sometimes have to be cut.

Temperament Booroolas are quiet, gentle, and easy to handle. Rams sometimes like to fight each other.

World distribution

Australia, New Zealand, United States, United Kingdom, South Africa, Poland, Israel, Germany, Netherlands, Hungary, Czechoslovakia, Canada, and France.

Contacts

In Canada: Agriculture Canada Experimental Farm
P.O. Box 400, La Pocatière, Que. G0R 1Z0
Tel. (819) 856-3141

In New Zealand: Booroola Sheep Society of New Zealand (Inc.)
P.O. Box 13-119, Christchurch, New Zealand
Tel. (03) 798-361

In Australia: CSIRO, Division of Animal Production
Armidale, N.S.W., Australia

Origin

The Polypay breed was developed in 1969 at the U.S. Sheep Experimental Station in Dubois, Idaho, and independently by a private breeder named George Nicholas in California. Four breeds each contributed 25% of the genetic makeup. They were Dorset, Targhee, Rambouillet, and Finnsheep. The final cross was made from mating Finnsheep-Rambouillet and Dorset-Targhee.

Importation into Canada

Polypay were first imported into Canada by a private breeder in Quebec (Mr. Denis Lavallée) who bought three rams and six ewes in 1980. He later imported another 2 rams and 18 ewe lambs in 1981 and 2 more rams and 10 ewe lambs in 1982.

Description

Color Polypay sheep are white.

Head The head is free of horns and has an open, white face. Ears of medium length are evenly covered with white hair or very short wool. Eyes are clear and bright.

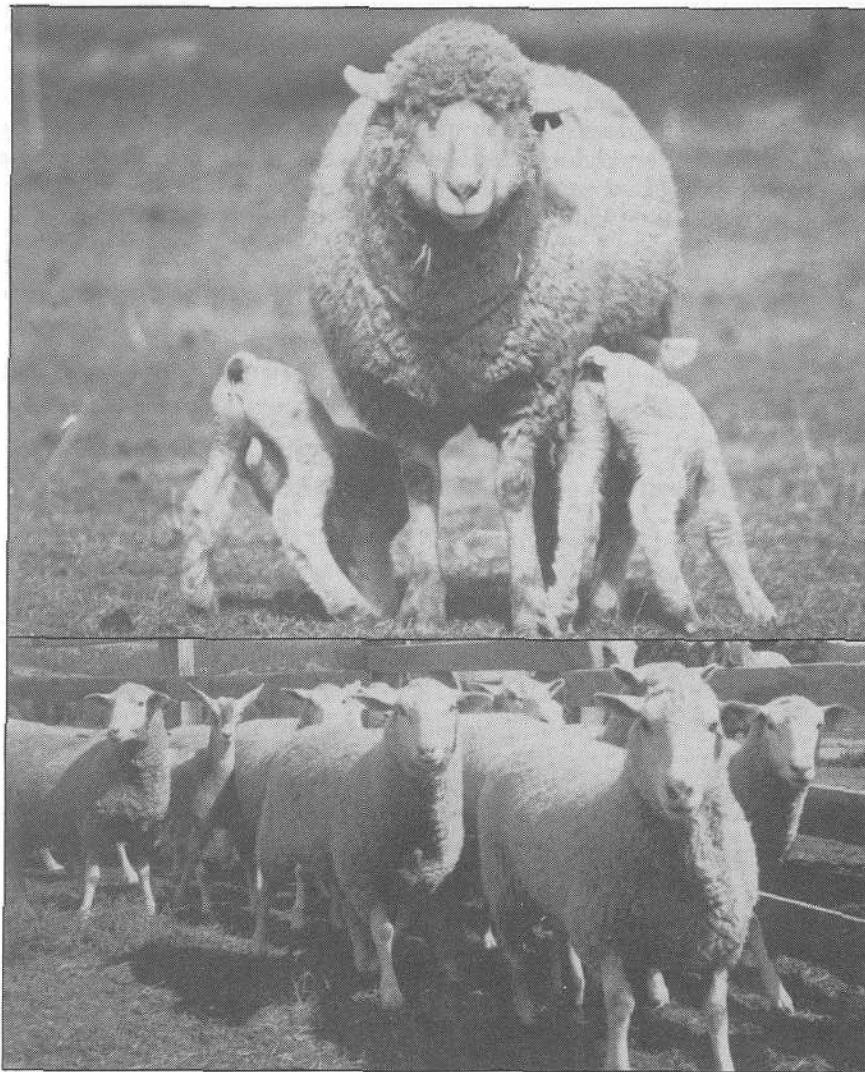
Neck The medium neck is smooth from head to shoulder, with no excessive wrinkles.

Body The body is characterized by a strong, level back along with a thick fleshing chest and trim brisket. Forelegs are set squarely under the body. The rump is moderately level on top to dock. Body weight of rams and ewes at 1 year of age is 65 and 46 kg, respectively, and for ewes 3 years old and older is 65 kg.

Legs Legs are medium in proportion to size, with medium bone, straight feet, and strong pasterns.

Tail The long, narrow tail is covered with wool.

Wool cover The body is completely covered by a dense fleece of average staple length, with uniform fiber quality. Wool covers the greatest parts of the belly and legs.



Top. A Polypay ewe and her lambs.

Bottom. A flock of Polypay ewes.

Reproduction

Sexual maturity Lambs mature early, and many can breed between 5 and 7 months of age. In a Canadian study most yearlings gave their first litter at 1 year of age.

Breeding season Polypay ewes have an extended breeding season and can be bred successfully every 8 months. In the United States, Polypays were subjected to twice-a-year lambing. In Canada, Polypays subjected to five lambings in three years averaged 1.5 litters per year.

Gestation length Gestation length of Polypay ewes averages 146 days.

Age at first lambing Lambing at 1 year of age is the common practice in Polypay flocks.

Fertility In the United States, fertility of ewe lambs mated at 7–8 months averaged 89%. In Canada, average fertility for ewes mated out of season and for those mated in season was 88 and 96%, respectively.

Litter size Lambs born per mature Polypay ewe exposed was reported at 1.8 lambs for once-a-year lambing and 2.1 for twice-a-year lambing in the United States (46.5 and 57.1 kg weaned lambs at 120 days, respectively). In Canada, the average was 1.76 lambs born for ewes under an accelerated lambing system. Yearly lamb production under three lambings in two years and five lambings in three years was 2.77 and 2.11 lambs, respectively.

Lamb mortality Lamb mortality in a Canadian study was 7.3% at birth and a further 8% between birth and weaning. In an American study, mortality was 22% between birth and weaning.

Production

Lamb weight Weight of Polypay lambs averaged 4 kg at birth, 20.5 kg at 50 days, and 34.2 kg at 100 days according to a Canadian study. In an American study, lambs averaged 3.8, 33.7, and 48 kg at birth, 120 days, and 1 year of age, respectively.

Meat production and carcass quality Lambs slaughtered at 46, 49, or 56 kg liveweight dressed 49.4, 52.6, or 53.6%, respectively. They had 4.5, 4.7, or 5.2% kidney fat; 7.7, 8.3, or 10.9 mm back-fat thickness; and 12.7, 14.8, or 16.7 cm² rib-eye area, respectively, according to American studies. It is not recommended to feed Polypay wethers to heavier weights (over 52 kg).

Milk production No evaluation of milk production has yet been made. However, judging from preweaning growth rate of lambs in a

Canadian study (330 g/day), milk production must be rather high. Ewes given proper care and nutrition can raise triplets.

Wool production Polypay yearling males and females produce 5.2 and 3.8 kg of wool, respectively, whereas 2-year-old and older ewes produce about 4.2 kg.

Fiber characteristics The fibers range between half and quarter blood in fineness, which is equivalent to 58 spinning count.

Specific attributes

Flocking tendency Flocking tendency is judged to be good in Polypay sheep. They appear to herd well on desert and mountain ranges in Idaho. They maintain flock integrity on fenced ranges of the southwestern United States so that guard dogs can be used effectively for good protection.

Mothering ability Some ewes lambing as lambs at 1 year of age need attention. Mature Polypay ewes are exceptionally good mothers and take adequate care of their lambs. Perinatal losses are low in Polypays.

Presence of horns Polypays are hornless.

Temperament Polypay sheep are generally of even temperament and are exceptionally easy to manage if they are worked frequently, such as in a farm flock.

World distribution

Polypays are now available in the United States, Mexico, and Canada.

Contacts:

In Canada:

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Calgary, Alta. T2E 7H7
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In the United States:

The American Polypay Sheep Association
Mrs. Linda Wick, Sec.
Route 2-2172, Sidney, Montana, 59270, USA
Tel. (406) 482-7768

Reproduction

Sexual maturity Lambs mature early, and many can breed between 5 and 7 months of age. In a Canadian study most yearlings gave their first litter at 1 year of age.

Breeding season Polypay ewes have an extended breeding season and can be bred successfully every 8 months. In the United States, Polypays were subjected to twice-a-year lambing. In Canada, Polypays subjected to five lambings in three years averaged 1.5 litters per year.

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Age at first lambing Lambing at 1 year of age is the common practice in Polypay flocks.

Fertility In the United States, fertility of ewe lambs mated at 7-8 months averaged 89%. In Canada, average fertility for ewes mated out of season and for those mated in season was 88 and 96%, respectively.

Litter size Lambs born per mature Polypay ewe exposed was reported at 1.8 lambs for once-a-year lambing and 2.1 for twice-a-year lambing in the United States (46.5 and 57.1 kg weaned lambs at 120 days, respectively). In Canada, the average was 1.76 lambs born for ewes under an accelerated lambing system. Yearly lamb production under three lambings in two years and five lambings in three years was 2.77 and 2.11 lambs, respectively.

Lamb mortality Lamb mortality in a Canadian study was 7.3% at birth and a further 8% between birth and weaning. In an American study, mortality was 22% between birth and weaning.

Production

Lamb weight Weight of Polypay lambs averaged 4 kg at birth, 20.5 kg at 50 days, and 34.2 kg at 100 days according to a Canadian study. In an American study, lambs averaged 3.8, 33.7, and 48 kg at birth, 120 days, and 1 year of age, respectively.

Meat production and carcass quality Lambs slaughtered at 46, 49, or 56 kg liveweight dressed 49.4, 52.6, or 53.6%, respectively. They had 4.5, 4.7, or 5.2% kidney fat; 7.7, 8.3, or 10.9 mm back-fat thickness; and 12.7, 14.8, or 16.7 cm² rib-eye area, respectively, according to American studies. It is not recommended to feed Polypay wethers to heavier weights (over 52 kg).

Milk production No evaluation of milk production has yet been made. However, judging from preweaning growth rate of lambs in a

Canadian study (330 g/day), milk production must be rather high. Ewes given proper care and nutrition can raise triplets.

Wool production Polypay yearling males and females produce 5.2 and 3.8 kg of wool, respectively, whereas 2-year-old and older ewes produce about 4.2 kg.

Fiber characteristics The fibers range between half and quarter blood in fineness, which is equivalent to 58 spinning count.

Specific attributes

Flocking tendency Flocking tendency is judged to be good in Polypay sheep. They appear to herd well on desert and mountain ranges in Idaho. They maintain flock integrity on fenced ranges of the southwestern United States so that guard dogs can be used effectively for good protection.

Mothering ability Some ewes lambing as lambs at 1 year of age need attention. Mature Polypay ewes are exceptionally good mothers and take adequate care of their lambs. Perinatal losses are low in Polypays.

Presence of horns Polypays are hornless.

Temperament Polypay sheep are generally of even temperament and are exceptionally easy to manage if they are worked frequently, such as in a farm flock.

World distribution

Polypays are now available in the United States, Mexico, and Canada.

Contacts:

In Canada:

Canadian Polypay Sheep Association
Mr. Tom Eggertson, Sec./Treas.
212, 6715 8th Street NE
Calgary, Alta. T2E 7H7
Tel. (403) 938-7581

In the United States:

The American Polypay Sheep Association
Mrs. Linda Wick, Sec.
Route 2-2172, Sidney, Montana, 59270, USA
Tel. (406) 482-7768

Origin

The Coopworth breed was developed at Lincoln College, New Zealand, by Professor Ian Coop. The work to develop the breed began in 1958 by mating of stud Border Leicester rams to Romney ewes over 3 years (1958–1960). Then crossbred rams and ewes were interbred. During its development, the Coopworth breed was selected severely to emphasize prolificacy and wool production. Once increased prolificacy had been established in the breed, increased selection pressure was placed on fleece weight and the growth of lean meat.

Importation into Canada

The first registered Coopworth sheep, 20 ewes and 5 rams, were imported by Agriculture Canada in 1985.

Description

Color Coopworth sheep are white. Some animals have black spots on the skin.

Head The head is relatively big, wide between the ears, and free of wool with the exception of a top knot. The ears are short and erect, and some are pigmented.

Neck The neck is short and wide.

Body The body is relatively large with a straight back. Ewes weigh 60–70 kg and rams 80–100 kg. In Canada, the imported ewes averaged 64 kg in 1987 and 75 kg in 1988 (5 and 6 years of age, respectively).

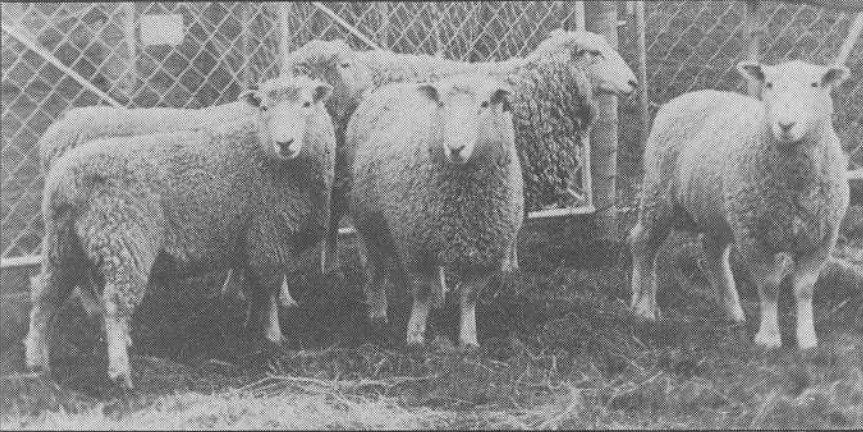
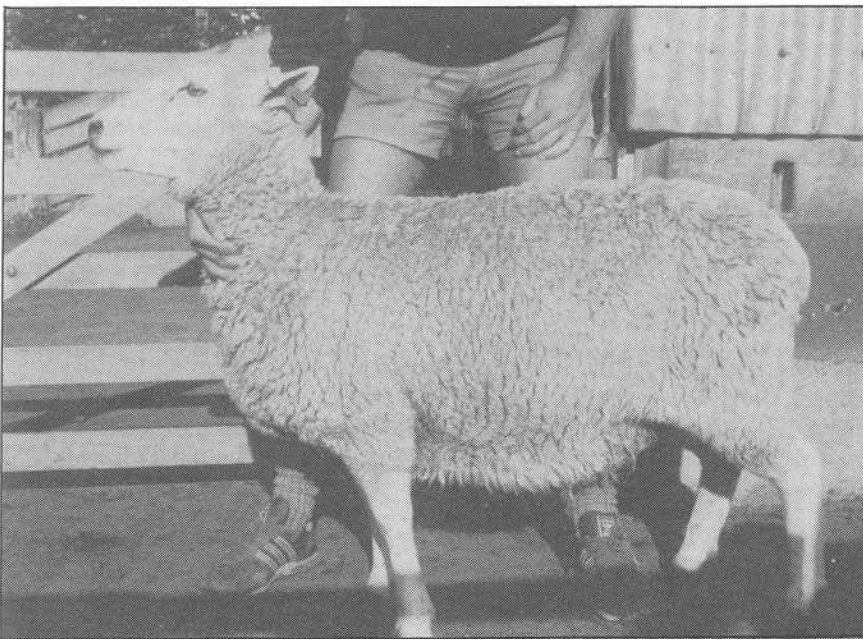
Legs Legs are usually bare, short, and thick.

Tail The tail is narrow and long. A hairy tail may indicate a coarse wool later in life.

Wool cover Long, dense wool covers the whole animal and extends to the belly. Wool is generally of good handle (soft to touch).

Reproduction

Sexual maturity Rams are sexually mature at 7–8 months. Up to 70% of ewe lambs (if well grown) will conceive at about 9 months and lamb at 14 months of age.



Top. A Coopworth ewe.

Bottom. The Coopworth rams imported from New Zealand.

Breeding season The breeding season of Coopworth ewes varies between 5 and 6 months according to a study conducted recently in New Zealand. The onset of the breeding season in New Zealand is delayed up to 3 weeks at higher latitudes and altitudes.

Gestation length The length of gestation is about 145 days in ewes carrying single lambs and few days shorter in those carrying larger litters.

Age at first lambing Ewe lambs are usually bred between 9 and 11 months of age.

Fertility Fertility is high in Coopworth sheep. Replacement rams and ewes are often selected from ewes conceiving in their first postweaning cycle. In certain flocks in New Zealand up to 95% of ewes lamb within 21 days.

Litter size Ovulation rate is close to 1.5 at the beginning and end of the breeding season and near 2.0 in the peak season according to a study conducted in New Zealand. Litter size increased gradually with selection from 1.53 in 1968 to 1.78 in 1976. According to the New Zealand Coopworth Society, average litter size of controlled ewes in 1985 was 1.9 lambs born. In Canada, the 20 ewes imported averaged 1.9, 2.0, and 2.0 lambs in 1986, 1987, and 1988, respectively.

Lamb mortality Because of heavier weights at birth and good milking ability of ewes, lamb mortality is rather low. In Canada, only 2 of 56 lambs born died before weaning (3.6%).

Production

Lamb weight Weight of lambs at birth averaged 4.5 kg for males and 4.1 kg for females. Weight at weaning (50 days) averaged 20 kg for males and 17 kg for females.

Meat production Coopworth ewes are excellent as prime lamb mothers. They produce lambs that are heavy at birth and that grow and mature fast. Dressing percentage from a study conducted in Canada averaged 39%. The low dressing percentage results from the heavier fleeces of these sheep.

Carcass quality Carcasses of Coopworth are comparable to those of other breeds in fat thickness over the body and in chemical composition. Coopworth have slightly longer legs and marginally poorer conformation. In Canada, a study showed that the percentages of wholesale cuts were 36.9% shoulder, 29.5% loin-rack, and 33.7% leg. Coopworth had 2.6% pelvic and kidney fat.

Milk production At peak lactation ewes nursing single lambs and twins produced 2.24 and 2.85 L of milk per day, respectively, according to a New Zealand study.

Wool production In New Zealand, Coopworth yearlings weighing 36 kg gave 3.1 kg wool of average grade. Coopworth ewes weighing 55–60 kg gave fleeces weighing 4–4.5 kg. In Canada, adult ewes and rams sheared 5.8 and 8.3 kg, respectively, for 12 months wool growth. In Romania, fleece weight of more than 2000 ewes averaged 3.1 kg.

Fiber characteristics Fiber diameter of Coopworth animals ranges between 33 and 37 μm . Staple length in male and female lambs average 13.4 and 12.4 cm, respectively. The number of crimps per centimetre is 4.4 and 3.6, respectively.

Specific attributes

Flocking tendency Tendency to flock is not highly developed in Coopworth, but the animals are quite easily handled. Coopworth sheep generally spread out when grazing hilly country rather than stay in a tight mob.

Mothering ability Ewes that do not mother their lambs well are culled regularly from the New Zealand flocks. In most commercial flocks the ewes lamb on their own, often under difficult environmental conditions. Coopworth ewes are superior in ease of lambing and mothering ability. Assistance needed at lambing is much reduced. Coopworth were rated top in behavioral studies comparing mothering instinct at lambing in different breeds in New Zealand.

Presence of horns Coopworth sheep are hornless.

Temperament The sheep are quiet, easy to handle, and pleasant to work with. New Zealand have placed some importance on selection for docility.

World distribution

New Zealand, Australia, United States, Canada, Yugoslavia, Romania, and Ecuador.

Contacts

In Canada: Mr. J. Van Stralen
R.R. 4, Prescott, Ont. K0E 1T0
Tel. (613) 925-4502

In New Zealand: Coopworth Sheep Society of New Zealand Inc.
Mr. V. Clarke, Sec./Treas.
75, East Belt, Lincoln, Canterbury, New Zealand

SUGGESTED USE OF NEWLY IMPORTED BREEDS

Romanov and Finnsheep

Because of their super fecundity and length of breeding season, pure Romanov and Finnsheep are most suitable for intensive sheep operations in Canada. Because of their high lambing rate, methods for raising lambs artificially have to be adopted. Both breeds are suitable for accelerated lambing systems. Crosses involving Romanovs are proving to be successful and popular with the breeders. When crossed with breeds such as Suffolk and Hampshire, the lambs grow fast and produce excellent carcasses. Romanov and Finnsheep rams are recommended for crossing with local breeds to produce crossbred ewes for use in commercial operations. These ewes can be crossed with terminal sire lines such as Suffolks, Hampshire, or Dorset to produce market lambs.

Booroola

The importance of Booroola Merino in the Canadian sheep industry rests in its role of transmitting the fecundity gene to other local sheep through crossbreeding. After several generations of backcrossing and selection for fecundity, prolific local breeds can be developed with very few characteristics from the original Merino. Prolificacy in flocks in which the fecundity gene of the Booroola has been introduced has increased from 0.5 to 1.0 lamb per ewe.

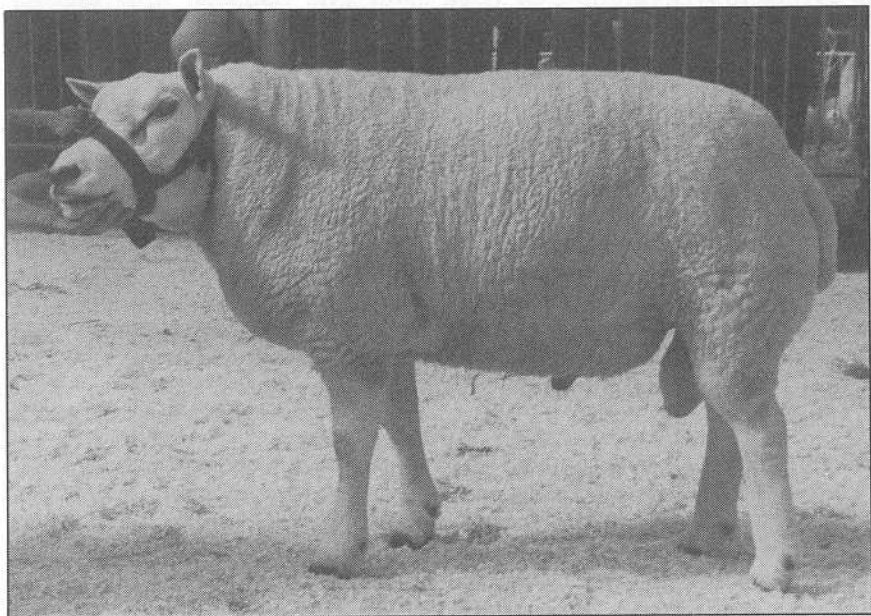
Polypay and Coopworth

Polypay and Coopworth sheep are recommended as dual-purpose breeds for the range conditions of western Canada. They are also suited for semi or complete intensive systems in eastern Canada. Because these breeds are rather new and already possess many of the desirable traits, it is preferable to raise them pure. No information is yet available on the performance of crosses involving these two breeds.

SUMMARY OF FIVE NEW BREEDS AT A GLANCE

	Romanov	Finnsheep	Booroola	Polypay	Coopworth
Country of origin	Russia	Finland	Australia	USA	New Zealand
Year of importation	1980	1962	1985	1979	1985
Color	Gray	White	White	White	White
Tail	Short	Short	Long	Long	Long
Sexual maturity	Early	Early	Late	Medium	Medium
Breeding season	Long	Long	Long	Long	Medium
Gestation length (days)	144	143	146	146	146
Age 1st lambing (months)	12	12	20	12	15
Fertility	High	High	Medium	High	High
Litter size at birth	2.5-3.5	2.5-3.5	2.8-3.2	1.6-2.0	1.5-2.0
Carcass quality	Medium	Medium	Poor	Medium	Excellent
Milk production/lamb	Medium	Medium	Poor	Medium	Medium
Mothering ability	Excellent	> average	< average	Good	Good
Wool production	Poor	Average	Excellent	Good	Excellent
Suggested use in Canada					
Purebreeding	Yes	Yes	No	Yes	Yes
Crossbreeding	Yes	Yes	Yes	No	No

Texel embryos were imported into the United States and, in the near future, Texel sheep from the United States can be imported into Canada. The Texel breed originates in the Netherlands. It is characterized by its heavy muscling, fast growth rate, and superior carcass quality. In a study conducted in Ireland carcasses averaging 16 kg yielded 63 and 60% lean in males and females, compared with 59 to 56% for Suffolk lambs, respectively. The ewes are moderately prolific; in France they averaged 1.6 lambs whereas in Ireland they produced 1.47 lambs. Animals of this breed produce white wool of medium quality. This breed could be used in Canada as a terminal sire line, an alternative for the Suffolk, to produce white, market lambs.



A Texel ram.

Dr. C.V. Hulet, USDA, ARS, New Mexico (Polypay); Mr. V. Clarke (Coopworth); Mr. G. Davis, NZMAF, Invermay Research Centre (Booroola); Research Institute for Animal Husbandry "Schoonoord", Zeist, the Netherlands (Texel); and the American Finnsheep Breeders and the American Polypay Sheep associations provided some information or photographs, or both, in this booklet.