

# THE SHEPHERD

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# The Romanov: A New Breed in North American Scene

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*After spending more than five years in quarantine, Romanov sheep finally found their way to Canadian farms and it will not be long before American sheep breeders discover the exceptional qualities of this breed. As the matter of fact, by the time you read this article, the first Romanov sheep in the U.S. soil are already in place. Sixteen pregnant ewes and four rams were transferred to the U.S. Meat Animal Research Center in Nebraska from the Agriculture Canada Research herd of Lennoxville.*

What makes the Romanov an exceptional breed is its superior reproductive performance, manifested in early maturity, excellent prolificacy and superior mothering ability. However, before we go into its performance, let us consider the history and characteristics of the Romanov sheep.

The Romanov originated in the Soviet Union 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-tail 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, not very far away from where the Finnish Landrace originated. Indeed, many scientists believe that the two breeds have the same origin.

The Romanov animals have the following characteristics:

1) The lambs are all black at birth and then turn gray as a result of a mixture of black and white wool fibres. The males have a mane of long black hair around the neck and down the brisket.

2) The head is small and angular, the poll is round, ears are upright and mobile. Eyes are voluminous. Males with or without horns, have a more convex forehead than females and a wider and shorter head.

3) The body is of medium size and the ribs are rounded. The Romanov animal is high on its legs.

4) The tail is short and very characteristically pointed.

5. The average body weight of the mature animal is 50 kg for the ewes and 70 kg for the rams.

Sexual maturity is early in the Romanov—males are capable of mating at three to four months of age; some ewes were reported to have lambed at nine months of age. Well-fed females can reach 40 kg live weight in six to eight months and can be bred at that age. Research work comparing the performance of ewes bred for the first time at different ages (ranging from 6 to 18 months) indicated that adequately-fed ewes, ten or eleven months of age, gave the best performance.

The Romanov breed is characterized by an extremely long season of sexual activity. In many ewes no anoestrous period can be detected at all. This trait is of particular importance to Canadian breeders in view of the extremely short season of sexual activity in Canadian sheep.

Ewes return to oestrus 30 to 40 days after lambing. Because gestation length in the Romanov is a few days shorter (averaging 144 days with a range of 139 to 149 days) than in most other breeds, it is possible to manage a flock of Romanovs to produce two crops of lambs within 365 days.

In the Soviet Union, the average number of lambs born to 100 ewes ranges from 184 to 320 lambs in different flocks depending on their condition. In many cases, ewes give birth to seven to nine lambs alive. One ewe was reported to have given birth to 64 lambs in 12 lambings. The high prolificacy of the Romanov results from a higher percentage of ewes producing twins and triplets rather than from few ewes producing exceptionally large litters. For example, in 110,000 lambings averaging 2.15 lambs, 20.2% were singles, 51.3% were twins, 24.2% were triplets, and only 4.3% over three lambs. In a flock averaging 2.5 lambs the corresponding percentages were: 6 to 8%, 38 to 40%, 44 to 46% and 8 to 10%.

In France, where management conditions are better than in the Soviet Union, the Romanov gave even better results. In six herds involving about 1400 births, prolificacy was 2.69 lambs for adult ewes and 2.07 for yearlings. One herd had an average of 3.13 lambs per ewe. The performance of the same ewe is homogeneous in successive litters—a Russian scientist found that the ewes giving birth to one, two or three lambs in their first litter would give an average lifetime production of 1.89, 2.15, or 2.68, respectively.

The average number of reproductive years in the herd is about 7.5 years. Mor-



tality in the adult ewes is estimated at 10 to 11% for ewes kept in confinement, and 3.7 to 7.6% for those kept on ranges in the Soviet Union.

Lamb mortality depends greatly on management and may go up to 50% in badly managed flocks. In the Soviet Union, preweaning mortality in flocks averaging two lambs per ewe ranges from 6.7 to 13.7%. In France, although the preweaning mortality was estimated at 13%, the average number of lambs weaned per ewe was 2.7. Crossbred ( $\frac{1}{2}$  Romanov,  $\frac{1}{2}$  native) have a 7% preweaning mortality, less than half of that estimated for the native breeds in France.

The Romanov is a good maternal breed. In Russia, the lambs are left with their dams until weaning, and milk production of the ewes for a lactation period of 100 days ranges from 110 to 160 kg with 6.3 to 7.4% butterfat. Maximum milk production is attained at the 15th day of lactation, and is highest in six to seven-year-old ewes. Some lines in the Romanov possess four functioning teats. The better milking and maternal ability of the Romanov is transmitted to their half-blood progeny.

Because the ewes nurse two to three lambs on the average, the growth rate of the lambs during nursing is slower than that for other breeds suckling only one, occasionally two, lambs. In the Soviet Union, average weight at 20 days of age was 5.8 kg; and at three months, 16.8 kg. In another study, weaning weight at four months averaged about 19 kg. If feed is supplemented to lambs during nursing, they can grow at the rate of 300 g per day.

Growth after weaning depends on the feeding management. In many studies, the 40 kg weight was attained in six to eight months. In France, the growth of crossbred ( $\frac{1}{2}$  Romanov,  $\frac{1}{2}$  native) lambs is much higher than in the pure Romanov, especially when the native breed involved is of the meat type.

Dressing percentage varies with age and feeding conditions. In lambs seven to eight months old, a dressing percentage of 49% could be expected. The high priced cuts represent 60 to 70% of the carcass. It is estimated that 80% of the carcass is edible meat.

#### **The Romanovs in Canada**

In October 1980, fourteen ewes and five Romanov rams were imported from France. The sheep were transferred to the Lennoxville Research Station in Quebec.

Most of the female lambs were mated when they reached between 7 and 8 months of age; only a few were mated at



9 to 10 months. The herd was subjected to an accelerated lambing system of 3 lambings every two years. The mating seasons were fall: (September-October), winter (January-February) and spring (May-June). Lambs born in January through March were exposed for the first time in the following fall; those born in October through December were exposed for the first time in the summer season (because many of these matings were not successful the animals were rebred in the following fall season); and finally the lambs born in May-June were bred for the first time in the winter season. The number of lambs left to suckle the dam depended on her milking ability, usually up to 3 lambs. The extra lambs in quadruplet and quintuplet litters were fed artificially on milk substitutes. Occasionally lambs were adopted by ewes which had lost their lambs. In a few cases, dams with superior milking ability raised their entire litters of 4 or 5 lambs. In such cases half the lambs were kept with the dam during the day while the other half was separated and bottle fed. During the night the two groups changed positions.

#### **Reproductive Performance**

Of the 309 matings, 81.6% were fertile (Table 1). For no apparent reason, ewes born as triplets had lower fertility rates than ewes born in smaller or larger litters. Season of mating was the most important factor affecting fertility. Only 42.5% of the ewes exposed during the summer conceived compared to 100% of the ewes exposed in the fall and winter. On the other hand, year of mating, season of birth or age of the ewe had little effect on fertility.

In a French study, all yearlings mated in the fall conceived whereas the per-

centage was only 3.3% for those mated in the summer. In the following fall mating season 86.2% of the ewes conceived. The performance of the ewes was similar to that of the yearlings; i.e. summer matings were mostly infertile. However in Spain, no difference in fertility between summer (80%) and fall-winter (83%) matings was observed.

Average litter size at birth was 2.86 lambs. Ewes born in large litters produced larger litters than those born single. This difference disappeared however, at weaning as a result of higher lamb mortality rates in larger litters. Season of birth of the ewe had little effect on litter size, whereas season of mating was highly significant. The largest litters at birth were those born following winter or fall matings, and at weaning were those following fall matings. Litter size at birth increased progressively with advance in parity, the largest litters being born to ewes in their 5th parity (3.54). Litter size at weaning was also highest in litters of ewes in their 5th parity (2.46) despite the higher preweaning lamb mortality (36.8%), of ewes in this category.

Overall, slightly more than half of a lamb (18.2%) was either born dead or died shortly after birth. Mortality at birth was positively associated with litter size at birth; the highest rates occurred in large litters. Of the average 2.38 lambs born alive, 2.10 lambs were weaned indicating that a further 8.7% ( $100 \times .25/2.86$ ) of the lambs died before 70 days of age. Mortality at birth in the Canadian study was much higher than those reported in France (10.9% and 4.2%). Part of the reason for the high mortality in Canada may be lack of exercise in the



first year (40%); lamb mortality decreased drastically when the ewes were allowed to exercise outdoors.

Prolificacy of Romanovs in France was recently reported at 2.62 lambs with pre-weaning mortality rate of 10.3%. Adult Romanov ewes kept in open-air system with fall matings in France gave on the average 3.06 lambs of which 17% died before weaning. Recent reports on Romanov performance in Spain, estimated prolificacy of yearlings at 2.6 lambs of which 11% died at birth and 31% died from 1 to 150 days of age.

Average litter weight at birth was 7.1 kg total and 6.0 kg alive (Table 1). Lamb weight at birth averaged 2.47 kg. At weaning, the average litter weight was 39.0 kg and weight of individual lambs averaged 18 kg. Litters born as a result of fall matings were the heaviest at birth and at weaning. Forty-one ewes completed a cycle of 24 months. Twenty-one (50%) succeeded in lambing 3 times during that interval of time; the other 20 did the same in 28 months. The average was 1.23 litters per ewe per year. The relatively poor fertility following summer matings was responsible for the deviation from the expected 1.5 litters per year. No specific studies were made to determine the age at sexual maturity of the Romanovs in Canada. However indications showed that the Romanovs are amazing. Twenty lambs were left accidentally with their dams 10 days after weaning at 70 days. Eleven of those conceived by their male sibs and lambed at 230 days of age weighing an average of 39.2 kg. Most produced twins and successively raised them. After this experience, weaning age was reduced to 50 days to prevent such accidents from reoccurring. Early lambing did not affect adversely growth and lifetime performance of Romanov ewes.

#### Carcass Evaluation

To study carcass quality, two groups of male lambs were fed from weaning until slaughter at 42-45 kg liveweight, a ration based on grain mixture and hay offered free choice. In the first study, 18 lambs were left intact whereas in the second, 6 lambs were castrated soon after weaning and 6 others were left intact. To compare the Romanov carcass with carcasses of a standard breed, carcass evaluation of 6 Suffolk lambs from a different study but subjected to the same feeding management and dissection procedures were included.

Romanov carcasses were generally shorter, fatter and had less lean tissues than those of the Suffolk (Table 2). A

**Table 1**  
Reproductive performance of Romanov ewes according to season of mating and parity.

Fertility			Litter size			Litter weight (kg)			Lamb mortality		Total	
		No	No	Birth	Weaning	Total	Birth	Weaning	Total	at birth	before weaning	prewean. mortal. %
Mean	309	81.6	249	2.86	2.38	2.10	7.08	5.98	39.0	.52	.25	26.7
Season of mating												
W	65	101.5	61	2.92	2.26	1.94	6.66	5.28	36.1	.66	.31	36.3
S	76	42.5	34	2.50	2.10	1.86	6.59	5.77	35.5	.40	.24	26.4
F	168	100.7	154	3.18	2.68	2.50	7.99	6.90	45.3	.49	.19	22.5
Parity												
1st			122	2.07	1.79	1.65	4.50	4.12	29.8	.28	.14	21.3
2nd			46	2.69	2.26	2.10	6.48	5.65	42.2	.43	.16	32.1
3rd			38	2.92	2.47	2.20	7.45	6.43	41.2	.45	.27	26.3
4th			22	2.89	2.42	2.10	7.49	6.44	38.3	.47	.32	29.5
5th			13	3.54	2.64	2.34	8.25	6.15	43.1	.90	.30	36.8
6th			8	3.07	2.49	2.21	8.32	7.12	39.2	.58	.28	30.4

W = Jan.-Feb., S = May-June, and F = Sept.-Oct.

higher percentage of fat (3.1 to 5.6%) accumulated around the kidneys, a characteristic mostly noticed in other prolific breeds such as the Finnish Landrace.

Romanov carcasses are characterized by relatively higher proportions of the anterior parts as compared to improved mutton breeds. This observation was also reported in France.

Dressing percentages in the Canadian studies averaged 42.8 and 45.7% in the two non-castrated groups and 44.7% in the castrated group which compare fair-

ly well with the 45.7% calculated for the Suffolk group.

In this study, many significant differences were found between castrated and non-castrated lambs, especially in traits related to fat deposition. The castrated lambs were generally fatter, with smaller area of loin-eye muscle and smaller proportion of shoulder.

#### Wool Production

Grease fleece weight for Romanov in Canada averaged 2.3 kg for males and 2.0 kg for females. The wool quality was

**Table 2.**  
Carcass characteristics of Romanov and Suffolk lambs.

	STUDY # 1		STUDY # 2		STUDY # 3	
	Non castrated Mean	Non castrated Mean	Castrated Mean	Suffolk Mean		
Number	18	6	6	6		
Chilled carcass wt (kg)	18.07	19.5	18.55	19.2		
Carcass length (cm)	64.7	65.2	63.8	68.8		
Heart girth (cm)	70.2	73.1	71.4	71.8		
Leg circumference (cm)	37.2	38.3	37.3	39.3		
Dressing percentage	42.8	45.7	44.7	45.7		
% leg	33.0	32.3	33.3	34.9		
% loin-rack	28.6	29.1	31.3	27.8		
% shoulder	38.4	39.0 <sup>a</sup>	35.0 <sup>b</sup>	36.6		
% kidney fat	3.0	3.6 <sup>a</sup>	5.0 <sup>b</sup>	1.8		
Area of loin-eye (cm <sup>2</sup> )	12.0	12.2 <sup>a</sup>	11.0 <sup>b</sup>	14.0		
Color of loin-eye	7.8	7.5	7.0	9.0		
Fat depth over loin-eye (mm)						
% lean	41.3	44.3 <sup>a</sup>	38.5 <sup>b</sup>	46.5		
12th rib % fat	36.8	34.4 <sup>a</sup>	43.3 <sup>b</sup>	32.1		
% bone	17.5	17.5 <sup>a</sup>	14.4 <sup>b</sup>	21.9		

a - b: significantly different

poor. Two types of fibres could be distinguished; the first was long, black and very coarse (hairy type), the other was short, gray and fine.

It can be concluded from these preliminary results that the performance of the Romanov breed in Canada is comparable to its performance in its country of origin and in other countries where it was imported, indicating that it adapted well to Canadian conditions.

#### Crossing with Romanovs

Romanov rams have been used since 1982 at the Lethbridge Research Station in Alberta in a crossbreeding experiment. The research is still in progress but at this point it is possible to report some conclusive results.

Romanov, Dorset, Finnish Landrace and Western Range rams have been exposed to  $\frac{3}{4}$  Dorset,  $\frac{3}{4}$  Finn, and full-blood Western Range ewes. These matings produced the following crossbred lambs: Dorset x  $\frac{3}{4}$  Dorset (DD); Dorset x  $\frac{3}{4}$  Finn (DF); Finn x  $\frac{3}{4}$  Dorset (FD); Finn x  $\frac{3}{4}$  Finn (FF); Romanov x  $\frac{3}{4}$  Dorset (RD); Romanov x  $\frac{3}{4}$  Finn (RF); Romanov x Western (RW); and Western x Western (WW).

Based on the performance of these crosses the following significant characteristics of the Romanov have been determined. Romanov is an early maturing breed. Ewe lambs sired by Romanov rams conceived about 20 days sooner than those sired by the Dorset or Finn rams and 30 days sooner than the Western ewe lambs (WW). Romanov is a highly prolific breed. Romanov crossbred females consistently outperformed the Finn crossbreds. Estimates of the additive genetic effect in Romanov ewe lambs gave a prolificacy of 251% compared with 213% in Finnish Landrace ewe lambs. In crossbreeding with the limited number of genetic lines (Dorset, Finn and Western) the RW cross is the most promising combination. It has given the second heaviest lambs at birth and weaning, the best survival rate from birth to weaning, and the fastest growing lambs in post-weaning feedlot tests, realizing the lowest number of days in feedlot. Romanov crossbred lambs produced carcasses of the same grades as those of DD crosses. There is sufficient evidence that Romanov rams do not produce lambs with inferior carcasses that would reduce profit for the producer.

Is there a place for Romanov in North American sheep industry?

Since the release of Romanov from quarantine more and more Canadian sheep breeders are discovering for

themselves the benefit of acquiring that breed. The feedback received by the author sowed a great enthusiasm and satisfaction with the performance of the Romanov. Although it is still early to evaluate the impact of introducing this breed into North America, no doubt that an impact will be felt within a few years, similar to that felt following the introduction of exotic cattle breeds such as the Charolais, Limousin and Chianina in the sixties. The characteristics of the Romanov will surely enable the breed to take a place in North American sheep industry.



## Inspect Barns Now for Necessary Repairs

It's easier to make any necessary repairs on a barn now than when it's 20 degrees below zero, says Don Bates, University of Minnesota Agricultural Extension Service agricultural engineer. He makes these recommendations for systematically inspecting a barn before winter:

\*Check drinking cups for deterioration and possible malfunction. Install new cups in case of doubt.

\*Cleaning fly specks and dust off light bulbs will make the barn a more pleasant place.

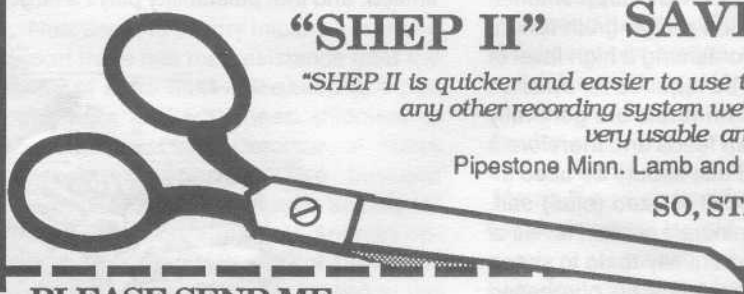
\*One common problem is closing gutter openings to the outside when the gutter cleaner is not in use. Often, bales of straw or hay are used with limited success. Consider some type of a vertical slide arrangement or a flexible material such as used belting.

\*Don't overlook the electrical system. Deterioration of wiring and fixtures is common, especially in older barns. An inspection by a qualified electrician, followed by any necessary repairs, is well worth the cost.



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