

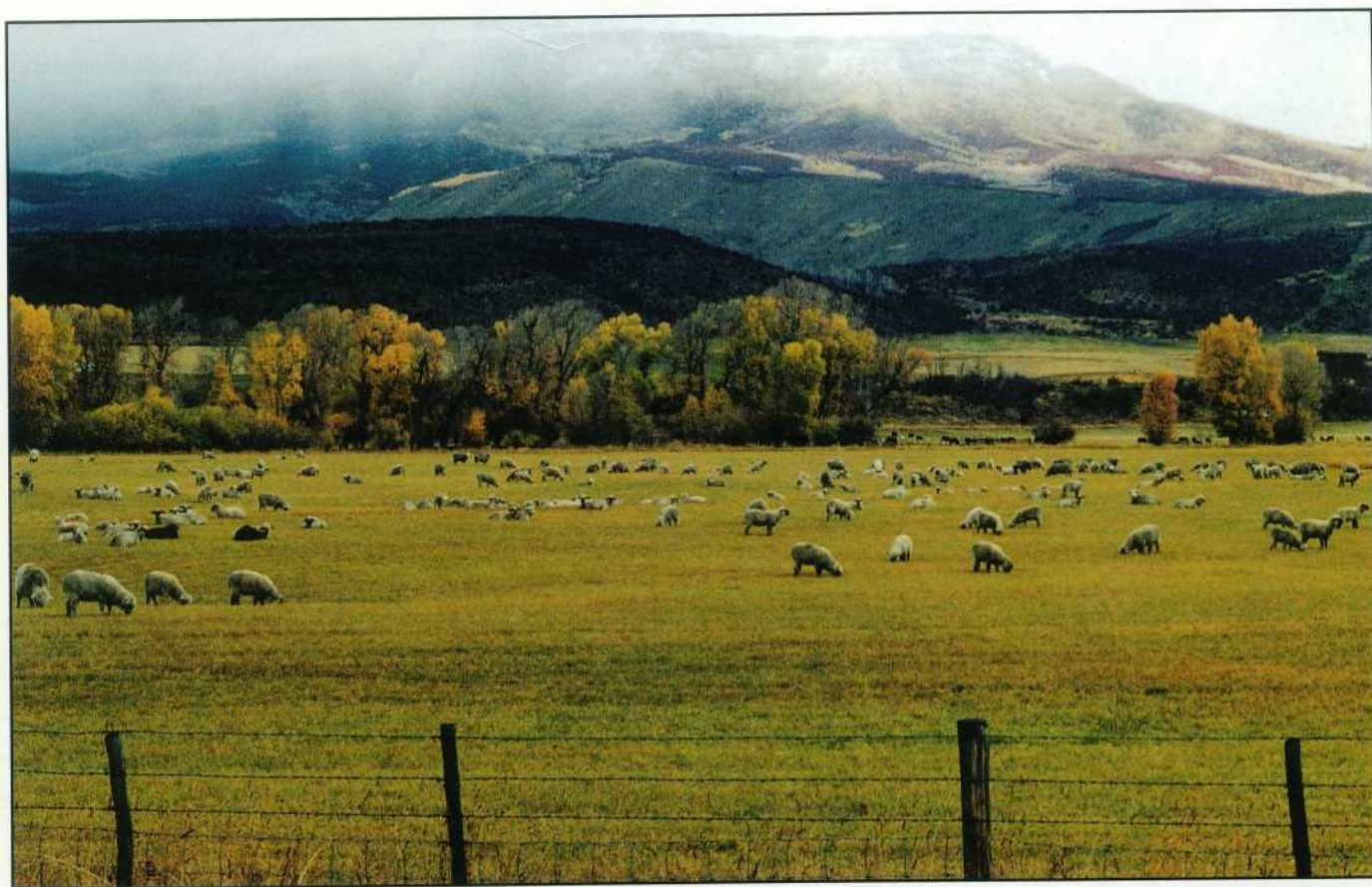
A GUIDE FOR SHEEP AND FARM LIFE

# THE SHEPHERD

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## *September in Wyoming*



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# The Charollais Breed Lands in North America

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Those of you who think that Charollais is only a French breed of cattle will be surprised to know that it is also a breed of sheep rapidly gaining a reputation as an excellent terminal sire breed. Although the Charollais is recognized as a meat-type breed, its high prolificacy and milk production put it in a category of dual-purpose sheep. This breed of French origin was developed in the Nièvre region by a breeder named Benoit D'azy from a cross between Leicester Longwool (commonly called Dishley, at that time) and local breeds in 1825. For a long time these sheep were known as "les mouton de pays" (sheep of the country), renamed Charollais only in 1963, and was recognized as a distinct breed in 1974. There are about 380,000 Charollais sheep in France but only 10,000 are under performance testing on 184 farms. This breed, which was exported to Germany, Spain, Portugal, Britain, and as far as China, is now in Canada and more of it will be coming soon. As a result of the recent changes in regulations, permitting importing genetic material in the form of semen and embryos, Ovine Reproduction Technologies, a company in Ontario, has imported **40 frozen embryos from Scotland in the fall of 1993. Thirty-five survived the thawing procedures and were transferred into Arcott recipient**

**ewes. By this spring, 21 healthy lambs were born, 11 males and 12 females.** I was also told that a private breeder introduced the Charollais into western Canada, again from the Scottish source. At present, efforts are underway to import up to 200 embryos over a period of 3 years into Quebec. A project presented by Mr. Denis Goulet in the lake St-Jean region, and supported by Agriculture and Agri-Food Canada to establish this breed has been recently approved, and the imported embryos will be soon arriving either from France where the breed originated or from Switzerland where the breed has made important strides. What makes this breed special? **Carcass conformation.** All the comparative studies conducted so far reported a superior conformation of lambs sired by Charollais rams. I followed the results of some of these studies conducted in France, Britain, Switzerland, and even China, all reported fast growth and superior conformation. I shall present in this article some of these results.

However, before doing that, I shall describe briefly the appearance and physical characteristics of the Charollais animals for those who are not familiar with that breed. The animals are rather large and heavy, the males weigh 100-150 kg and the females 75-95 kg. The

head is clear of wool but sometimes has colored hair with black ends. The front is large, ears are fine, long, and mobile. The body is long with a muscular belly, the chest is large and deep, and the shoulders are smoothly blended into the body. Legs are thick, rather short, colored, and void of wool. The wool is short consisting of white fine fibers.

Sexual maturity is rather late in Charollais, only 43% of the ewes lamb between 12-15 months of age, and 39% lamb between 24-36 months. Prolificacy of ewes lambing for the first time vary between 1.37 to 1.72 according to age at lambing. The average for ewes lambing before 18 months of age is 1.41. Prolificacy of adult ewes averages 1.85 and can reach 2.23 in well run farms. About 60% of all the lambings are twins, 30% singles, and 10% triplets and quadruplets. Between birth and 30 days, single born male and female lambs gain on average, 285 and 271 grams per day, while twins gain 230 to 220 grams, respectively. From 30 to 70 days of age, daily gain of the four groups averages 325, 279, 278, and 274 grams, and weight at 70 days, 26.5, 24.9, 22.3, and 21.2 kg, respectively. The Charollais is used intensively in crossbreeding to produce heavy market lambs.

Research to compare the value of Charollais as terminal sire breed has been carried out in different parts of the world. In France, scientists compared the performance of lambs sired by Charollais with that of three other French terminal sire breeds. The experiments were run using commercial ewes under two managements, either extensively on pasture or intensively in barns. The three other breeds were Berrichon, Vendéen, and Red of the West (Rouge de l'Ouest). Table 1 presents the growth of crossbred lambs under the two systems, and Table 2 presents carcass evaluation of lambs raised on pasture.

As can be noticed from Table 1, the performance of lambs from the four breeds was rather similar. Only in carcass conformation score that the Charollais showed superiority over the other breeds whether on pasture or in confinement. The carcass evaluation in Table 2 showed that Charollais had shorter and wider legs than the other breeds.

In Britain, a study to compare the progeny of six terminal sire breeds was conducted. The lambs were slaughtered either at a fixed weight or at a fixed degree of finish. Figure 1 shows the weight of lambs from birth to 16 weeks. Lambs sired by Charmoise rams were



Charollais donor ewes.

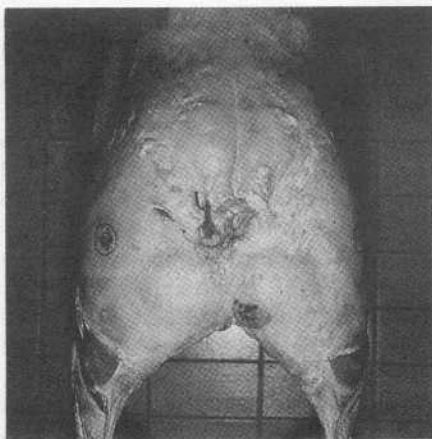


significantly lighter than lambs sired by the other breeds, from birth to 16 weeks of age. Charollais-sired lambs were similar in weight up to 16 weeks of age to those sired by Texel, Meatline (a new terminal breed developed in UK) and Texel-Oxford. Lambs sired by Oxford were the heaviest at 12 to 16 weeks of age. Table 3 shows the performance of the lambs sired by the six breeds when slaughtered at fixed weights and when slaughtered at a fixed degree of fatness.

When slaughtered at fixed weights, only the Charmoise-sired lambs were older and fatter than those sired by the other sire breeds, which were rather similar in age and fatness. Charollais- and Charmoise-sired lambs had the highest carcass conformation score, but the differences with the other groups were not statistically significant. When slaughtered at fixed level of fatness, lambs of the six groups were similar in age, but Charmoise-sired lambs were lighter in slaughter weight. Dressing percentage was highest in Charmoise-sired lambs (42.5%) and lowest in Oxford-sired lambs (40.2%). For the other sire breeds, it ranged between 40.9 and 41.9%. The composition of the carcasses of lambs slaughtered at an average weight of 41 kg are presented in Figure 2.

The results showed that Texel-sired lambs had the highest lean and lowest fat percentages whereas Charmoise-sired lambs had the highest fat and lowest lean. Charollais and the other sire breeds were intermediate.

Another British study compared the performance of Charollais with that of Texel and Suffolk for producing market lambs. The lambs were slaughtered either as they attained about 40-41 kg live weight or when they attained a specific degree of fatness. Live weight gain from birth to weaning and from birth to slaughter of Charollais-crossed lambs were intermediate between Suffolk- and Texel-sired lambs, as shown in Table 4.



110-day-old Charollais ewe lamb



65-day-old Charollais lambs.

Table 1. Performance of four sire breeds under two managements

	Weaning (W)		Slaughter (S)		Average daily gain, g			Dressing %	Carcass score
	age	wt, kg	age	wt, kg	B-W	W-S	B-S		
Lambs on pasture									
Charollais	108	25.0	201	37.1	206	131	185	49.9	9.2
Berrechon	107	25.6	193	36.6	215	109	178	49.4	8.7
Vendéen	109	24.4	211	36.7	200	121	179	49.3	9.0
Red of the West	108	24.1	212	37.3	201	129	178	49.1	8.8
Lambs in confinement									
Charollais	79	25.6	137	34.9	245	211	232	51.3	9.6
Berrechon	79	26.2	130	34.5	252	226	242	51.0	9.0
Vendéen	79	25.3	135	34.5	242	213	231	49.6	9.2
Red of the West	79	25.2	135	34.3	240	212	232	50.4	9.0

Table 2. Performance at slaughter of lambs sired by four terminal breeds

	Charollais	Berrichon	Vendéen	Red of the West
Age at slaughter, days	258	259	259	260
Wt. at slaughter, kg	36.8	36.9	36.4	35.9
Wt. of carcass, kg	18.5	18.5	17.5	18.1
Carcass length, cm	64.7	64.2	64.3	65.0
Fat over eye muscle, mm	3.28	3.26	3.19	3.23
Length of leg, cm	24.4	25.5	24.6	25.1
Width of leg, cm	23.7	22.9	22.6	23.1
Width of shoulders, cm	19.9	20.1	19.6	19.8
Width of the eye muscle, cm	5.99	5.85	6.02	5.90
Kidney fat, g	223	242	195	223



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Table 3. Performance of lambs sired by six terminal breeds and slaughtered at fixed weights or fixed level of fatness

	Fixed slaughter weights			Fixed fatness level	
	Age in days	Backfat, mm	Conformation	Age in days	Slaughter weight, kg
Charmoise	164	8.9	9.1	147	35.3
Texel	156	7.4	8.1	146	37.9
Meatline	154	7.7	7.9	145	37.4
Charollais	153	8.2	9.0	147	36.9
Texel-Oxford	151	7.6	8.0	145	38.3
Oxford	146	8.2	8.3	140	39.2

Table 4. Performance of lambs sired by Suffolk (S), Texel (T), or Charollais (Ch) rams and slaughtered either at constant weight or constant degree of finish.

	Constant weight			Constant fatness		
	S	T	Ch	S	T	Ch
Gain birth-weaning	279	269	270	281	269	272
Gain birth-slaughter	262	250	249	266	252	254
Age at slaughter	143	144	149	141	142	147
Dressing percentage	43.7	44.6	44.3	43.5	44.3	44.1
Fat score	9.91	9.62	10.42	9.53	9.38	9.56
Conformation score	2.95	2.71	2.98	2.93	2.70	2.98

### Weight of lambs sired by six breeds

At birth, 4, 8, 12, and 16 weeks of age

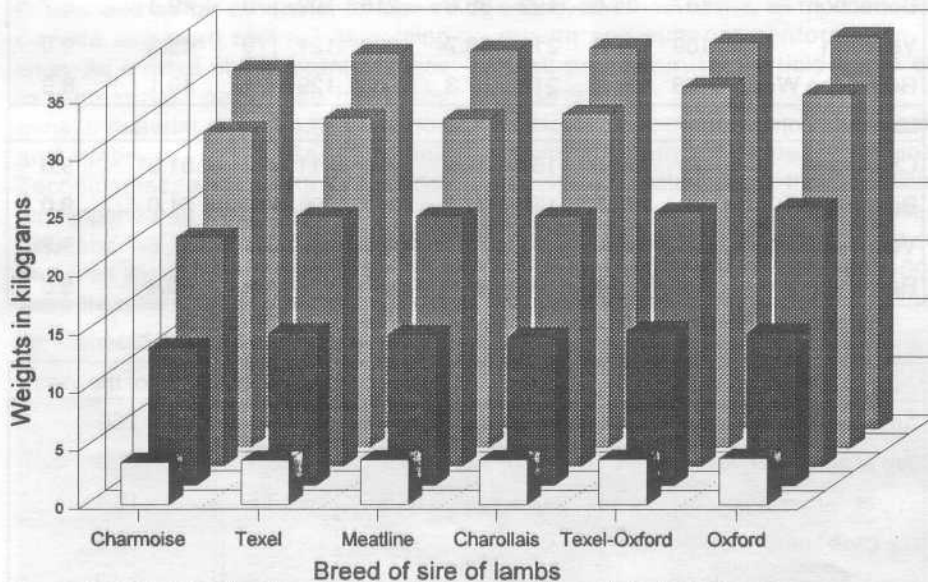


Figure 1. Weight of lambs sired by six terminal breeds in Britain.

Charollais-sired lambs were slightly older to reach the slaughter weight compared to Suffolk- and Texel-sired lambs. Dressing percentage was around 44% for the three breeds, whether slaughtered at similar weights or similar degree of finish. Conformation score was similar in Charollais- and Suffolk-sired lambs (3.0 and 2.9), significantly higher than Texel-sired lambs (2.7).

The carcasses of lambs sired by the three breeds were dissected into lean, bone, and fat. The weight of lean, intermuscular fat and subcutaneous fat were not significantly different between breeds, but carcasses from Texel-sired lambs tended to have less fat and more lean than those from the other two breeds. Suffolk-sired lambs had more bone than Charollais- or Texel-sired lambs.


In France, a comparison between Texel and Charollais was made in their rate of infection by Maedi Visna virus (OPP). Of 13,500 Texel ewes tested, 25% were positive, whereas of 7,542 Charollais ewes tested, only 2% were positive.

The history of Charollais in Switzerland is rather recent. In 1990, a few breeders in the western part started to systematically breed their Swiss White Alpine sheep with Charollais and register the product as a new breed called Swiss Charollais sheep. From Switzerland, some information on the performance of pure Swiss Charollais is emerging. The 1991 Annual Report of Swiss Sheep Breeders' Association reported that for 199 ewes, age at first lambing averaged 662 days, litter size at the first three parities averaged 1.8, 1.2, and 1.2 lambs with almost no lamb mortality up to 30 days of age.

China also got involved in the Charollais action. Imported rams were crossed with Tibetan sheep. Their results showed that crossbred lambs sired by Charollais and Border Leicester grew faster than those sired by other Chinese breeds.

Preliminary results from the Canadian flock are emerging, average adjusted 50 and 100 day weights are 30.5 (23.0-35.7) and 47.5 (43.5-55.0) kg, respectively. Dressing percentage on warm and cold bases are 56.5 and 54.1. Classification according to the new Canadian Grading System, muscle score 5-4-5 for leg, loin, and shoulder, respectively (out of possible 5).

It will not be long before this breed finds its way to all centers and becomes accessible to all sheep farms. However, it is still early to predict the impact of this new breed on the North American lamb meat market. But it is safe to say that



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