

# 2005 HAIR SHEEP WORKSHOP @ VIRGINIA STATE UNIVERSITY

## Carcass Composition of Hair Sheep Breeds and Crosses

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High shearing costs and low prices for the medium wools are characteristic of most U.S. meat sheep breeds, and the desire to capitalize on easy-care characteristics such as resistance to internal parasites and high lamb and ewe vigor have led to an increase in the use of hair sheep in U.S. production systems. However, limited information is available on carcass characteristics of hair breeds and their crosses compared to traditional U.S. breeds. This paper summarizes recent studies that have been conducted to evaluate carcass composition of hair breeds.

Sire comparisons involving hair breeds and wool breeds have been conducted at the U.S. Sheep Experiment Station in Idaho, the U.S. Meat Animal Research Center in Nebraska (Shackelford et al., 2005), and at Virginia Tech. Dorper-sired lambs reported greater carcass weights than either Columbia- or Suffolk-sired lambs when mated to Columbia ewes. Sire breed groups were similar for dressing percentage, leg score, yield grade, and quality grade although Dorper-sired lambs had greater fat thickness at the 12th rib than Suffolk-sired lambs of the same age. Dorper-

sired lambs out of Dorset x Rambouillet x Finnsheep ewes reported greater body wall thickness and leg conformation scores compared to Dorset-sired crossbred lambs of similar carcass weight.

Sire breed groups were similar for loin muscle area and 13th rib fat thickness (**Table 1**). Means et al. (1999) also reported higher leg conformation scores for Dorper-sired compared to Suffolk- or Western white-face sired lambs. In a comparison of nine different sire breeds including two hair sheep breeds, Shackelford et al. (2005) reported Dorper-sired lambs had heavier carcasses with larger loin muscle areas than all other breeds evaluated (Dorset, Finnsheep, Romanov, Katahdin, Rambouillet, Columbia x Hampshire x Suffolk composite) except Suffolk and Texel at a constant slaughter age. Fat thickness over the rump was greater for progeny of Dorper rams than those of all other breeds. Dorper-sired lambs had greater 12th rib fat thickness than Suffolk, Texel, Rambouillet, Finnsheep and Romanov progeny and Dorper-sired lambs had a higher percentage of total carcass fat than progeny Suffolk, Texel, Rambouillet, and Dorset sires. In the same study, progeny of Katahdin sires had carcass weights similar to Dorset and Texel-sired progeny (lighter than Suffolk, Dorper; heavier than Finnsheep, Romanov). Katahdin progeny ranked similarly to other sire breeds for loin muscle area as for carcass weight, although Texel progeny had larger loin muscle areas than Katahdins. Directly comparing Dorper and Katahdin progeny, Dorper-sired lambs grew faster, and had larger loin eyes.



	Dorper-sired	Dorset-sired
Hot carcass weight, lbs.	100.8	99.4
Dressing percentage	58.0	57.3
Backfat thickness, inches	0.25	0.22
Loin eye muscle, square inches	1.62	1.55
Quality grade*	11.3	11.0
Yield grade	2.90	2.58

\*Quality grade is based on numeric scores of 10 = low choice, 11 = average choice and 12 = high choice, etc.

Other studies have evaluated lambs produced by mating hair sheep sires to hair or wool breed ewes. Bunch et al. (2004) evaluated carcass composition of lambs produced by mating St. Croix, Dorper, or wool breed sires to wool breed ewes or St. Croix ewes. Carcass weights and loin muscle areas were lower when Dorper and St. Croix sires were mated to St. Croix ewes compared to wool breed ewes. Fat thickness at the 12th rib was greater for hair breed-sired lambs than wool breed sired lambs regardless of ewe breed. Burke et al. (2003) evaluated Dorper or St. Croix sires on St. Croix or St. Croix-Romanov cross ewes, and Katahdin lambs. Dorper × St. Croix progeny had heavier carcass weights than St. Croix-sired or Katahdin lambs. Dressing percentage and 12th rib fat thickness was lower for St. Croix lambs compared to Dorper-sired progeny or Katahdin. Loin muscle areas were largest for Dorper-sired progeny, smallest for St. Croix-sired, with Katahdin intermediate. Comparisons of three hair sheep breeds, Katahdin, Barbados Blackbelly and St. Croix, showed that carcass weights and loin muscle areas were greater for Katahdin than Barbados Blackbelly or St. Croix (Table 2).

	Blackbelly	Katahdin	St. Croix
Hot carcass weight, lbs.	29.8	44.4	33.3
Loin muscle area, square inches	1.23	1.39	1.05
Leg score	9.67	11.17	9.50
Quality grade*	9.62	11.21	10.12

\*Quality grade and leg score based on numeric scores of 9 = good, 10 = low choice, 11 = average choice and 12 = high choice, etc.

## Conclusion

These studies indicate that hair breeds differ in carcass composition. Dorper-sired lambs produce carcasses that are most similar in weight and muscling to that of wool breeds, but generally have greater fatness when slaughtered at the same age. Katahdin-sired lambs typically produce carcasses that are heavier in weight and more muscular than St. Croix or Barbados Blackbelly when harvested at a similar age. Katahdin, St. Croix, and Barbados Blackbelly carcasses typically have a higher percentage of kidney-pelvic fat than wool meat-type breeds, although differences in 12th rib fat thickness between these breeds and others are less consistent.

## Literature Cited:

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