# CARCASSES FROM TEXEL AND SUFFOLK SIRED LAMBS RESULTED IN SIMILAR WHOLESALE CUT YIELD

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**Abstract – The objective of this study was to determine if a difference in carcass characteristics and product yield existed between Texel and Suffolk sired lambs. Lambs were finished on a high concentrate diet until the average 12th rib fat thickness determined by ultrasound was 0.5 cm. Lambs (n = 17) were harvested using normal industry practices. Carcass data was collected. Lamb carcasses were cut into NAMP cuts 232 loin, 233A Leg, 204 rack, 207 shoulder, 209 breast and 210 foreshank. Each individual NAMP cut was weighed. No significant difference was found for carcass weight, fat thickness, longissimus muscle area (REA) and percentage of the carcass comprised by the different wholesale cuts between carcass from lambs sired by Suffolk or Texel rams.**

**Key Words – Suffolk, Texel, Carcass Yield**

## I. INTRODUCTION

Leymaster and Smith [1] suggested sire suitability, in terms of selection of a breed, could be measured in lambing rate of the breeding flock and the viability of the progeny. Furthermore, Leymaster and Jenkins [2] suggested the Suffolk breed was popular as a terminal sire because the progeny had higher carcass conformation scores along with increased survival, growth rate, and better fat deposition. Also, the United Suffolk Sheep Association [3] claims the Suffolk breed excels in weight of retail cuts per day of age, as well as estimated percentage of closely trimmed retail cuts from a carcass. However, mature weights of ewes can reach up to 250 pounds. In range flock conditions, large ewes cannot obtain enough nutrients from available forage to produce at their optimal level. Therefore, Suffolk-sired ewes would not be appropriate for replacement ewe lambs in a range flock situation. Many producers select replacement ewes from within the flock. The need to maximize meat yield while still producing replacement ewes suggests an alternative to the Suffolk breed is desired.

One possible breed alternative, the Texel, is known for its muscle development in the ribeye as well as the leanness of carcasses [4]. According to Leymaster and Jenkins, [2] Texel lambs deposit more subcutaneous fat as well as less intermuscular fat, than Suffolk sired lambs at similar live weights. Leymaster and Jenkins [2] also reported carcasses from Texel sired lambs had greater internal fat along with more subcutaneous fat when compared to Suffolk offspring at similar carcass weights. In contrast, Abdulkhaiq et al. [5] reported carcasses from Texel sired lambs displayed much leaner carcasses than Suffolk sired lambs at the same live weight. The Texel breed is of more moderate size than Suffolk with mature weights of purebred ewes reaching 200 pounds, making them an alternative sire for range operations that keep replacement ewes while still maintaining meat production. The objective of this study was to determine the difference in carcass characteristics and product yield between carcasses from lambs sired by Texel or Suffolk rams reared on range conditions and then finished in the feedlot.

## II. MATERIALS AND METHODS

Targhee ewes from the Red Bluff Research Ranch near Norris, Montana were bred to either Suffolk or Texel rams. Wether lambs were weaned in late August and held on sainfoin pasture until October 1, when 30 were randomly selected and transferred to the Montana State University Grow Safe Unit to determine individual feed intake. The lambs were in the Grow Safe for 50 d. During this time they were fed a 40% concentrate diet. After completion of feed intake portion of the trial, lambs were transferred to the Montana State University Fort Ellis, feedlot where they were fed a 50% concentrate diet until ultrasound indicated the average fat thickness was 0.5 cm.

Lambs (n = 17) were transported 96 km to a processing facility where they were harvested following normal industry practices. Hot carcass weight, fat thickness, longissimus muscle area (REA), and carcass conformation scores were collected after a minimum 48 hour carcass chill. The foresaddle was fabricated according to National Association of Meat Purveyors (**NAMP**) [6] specifications into the square cut shoulder (NAMP #207), rack (NAMP #204), breast (NAMP #209), and foreshank (NAMP #210). The hindsaddle was processed into the loin (NAMP #232) and leg (trotter removed; NAMP #233A). All primal/subprimal cuts were trimmed and weighed to determine wholesale cut yield. The carcass weight, as well as the conformation score, fat thickness (cm), and *longissimus* area ($cm^2$) as well as the percentage of the carcass weight from the NAMP cuts were calculated and analyzed. Statistical analysis was carried out using the GLM procedure of SAS with breed as the dependent variable and different cuts and carcass measurements as independent variables.

## III. RESULTS AND DISCUSSION

There were no significant differences between the measured carcass characteristics or the percentage of the carcass made up by the individual wholesale cuts between carcasses from lambs sired by Suffolk or Texel rams (Table 1). As expected, because of the use of ultrasound to determine harvest endpoint, fat thickness was not different in the carcasses from lambs sired by Texel and Suffolk rams. This disagrees with Leymaster and Jenkins [2] who reported more subcutaneous fat in carcass from lambs sired by Texel rams as compared to carcasses from lambs sired by Suffolk rams. However, the Leymaster and Jenkins study harvested lambs at the same weight range, while in this current experiment, harvest was determined by fat thickness as measured by ultrasound. Different rates of maturity between the Texel and Suffolk breed could explain why differences were seen between carcass fat thickness at a specific weight. However, the lambs in this study did not differ in carcass weight or fat thickness. Leymaster and Jenkins [2] reported carcasses from lambs sired by Suffolk rams had a different shape and size then carcasses from lambs sired by Texel rams; carcasses from Texel sired lambs were shorter and more compact. This disagrees with the results reported here; no difference in carcass conformation score or ribeye area was found. Ali et al. [7] reported Suffolk sired lambs were heavier than Texel sired lambs at the same day of age, possibly resulting in a higher carcass weight. This disagrees with the results reported here, where no significant difference between the carcass weights of lambs sired by Suffolk or Texel rams grown under similar conditions was found. No differences in percentage of wholesale cuts were found in this study. This disagrees with Ali et al., [7] who found the percentage boneless closely trimmed retail cuts was greater in carcasses from lambs sired by Texel rams than carcasses from lambs sired by Suffolk rams (45.6 % vs 44.6 %) even though carcass weight was greater for lambs sired by Suffolk rams (33.7 Suffolk, 28.9 Texel). When used as terminal sires on Targhee ewes, Texel sired lambs produced similar carcasses to lambs sired by Suffolk rams, suggesting Texel sires can be used interchangeably with Suffolk sires to produce lambs in range flocks.

Table 1 Mean ± SEM of carcass characteristics and wholesale cut yields

| Item | Suffolk | Texel |
|---|---|---|
| Carcass Weight* | 34.6±1.3 | 34.5±1.6 |
| Conformation Score[b] | 430±26 | 371±28 |
| Fat, cm | 0.4±0.016 | 0.4±0.02 |
| REA, $cm^2$ | 7.8±0.1374 | 7.1±0.16 |
| Wholesale cut | | |
| 232 Loin (%) | 6.92±0.15 | 7.00±0.142 |
| 233A Leg (%) | 28.3±0.42 | 28.69±0.39 |
| 208 Rack (%) | 8.63±0.15 | 8.51±0.17 |
| 204 Shoulder (%) | 23.47±0.30 | 23.56±0.41 |
| 209 Breast (%) | 4.06±0.12 | 4.19±0.10 |
| 210 Foreshanks (%) | 4.15±0.11 | 4.07±0.13 |

[a]Hot carcass weight
[b]Leg Score: 200 = Utility, 300 = Good, 400 = Choice, 500=Prime

## IV. CONCLUSION

The current study found no significant difference in the carcass weight or percent wholesale/subprimal product yield of carcasses from lambs sired by either Suffolk or Texel rams. This suggests the Texel breed can be used as a

terminal sire in a range lambing situation without sacrificing carcass yields and also allowing producers the option to raise replacement ewes.

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