

# 2005 Hair Sheep Workshop @ Virginia State University

## Performance of Hair Sheep in a Range Environment

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The U.S. sheep industry has evolved to where different breeds have found their niche. The distribution of sheep breeds in the Eastern U.S. is different from that of the Southwest. Breed use depends on physical environment, economic environment, and management system. Sheep producers who are considering switching to hair sheep must consider expected performance levels in their environment.

Comparisons of breed performance should be considered in the context of a production environment because relative ranking of breeds or breed crosses may differ among varied production environments. Few research projects have been conducted comparing performance of hair sheep breeds to other U.S. sheep breeds. Breed evaluation in a range environment is complicated by the variation in range conditions. A good rainfall year is a different environment than a drought year. We know that production is a function of environment. If ewes have better pasture or more feed, they are expected to produce more or bigger lambs than ewes that do not have adequate nutrition.



A breed comparison research project at Texas A&M University was started with Dorper and Rambouillet ewes in 2003. The research reports from South Africa indicate that the Dorper is a hardy breed that does well in conditions similar to much of the arid Southwestern U.S. With the changes in wool value and shearing costs of the last decade, some sheep producers are seeking an alternative to the Rambouillet, which has been the traditional breed in much of the sheep producing areas of the Southwestern and Western U.S. The early U.S. research projects that used Dorper sheep used Dorper rams to produce crossbred offspring (Snowder & Duckett, 2003; Notter et al., 2004). The need for a breed comparison trial of the Rambouillet versus a hair sheep breed in a range environment was not being met. Dorper was chosen because of its growth in numbers in the U.S. and because the available literature from South Africa indicated that they had the potential to do well on Texas rangelands.

The role of the Dorper in U.S. sheep production would most likely be as a maternal breed in arid environments. Starting with crossbred ( $\frac{1}{2}$  or  $\frac{3}{4}$ ) ewes would likely still involve the costs of shearing, and result in a fleece with little or no economic value. Therefore, this project was started with ewes that had  $\frac{7}{8}$  or more Dorper ancestry. In 2003, the value of Dorper ewes was too high for the available research budget. An appeal was sent to Dorper breeders for the donation of ewe lambs to start the research project. Several Dorper breeders responded in 2003 by donating enough ewes to get the project started. Texas Rambouillet producers also donated some ewes. Other Rambouillet ewes were purchased from several different flocks. In late 2003, the **National Sheep Industry Improvement Center (NSIIC)** awarded a grant to allow for the expansion of this project so that it could be conducted on a meaningful scale. With the help from NSIIC, the project was expanded to have 95 Dorper ewes from 20 different flocks and a similar number of Rambouillet ewes from 13 different flocks.

This project was designed to compare lifetime lamb production for these two breeds of ewes. The ewes will be run on the same pastures and bred to the same rams. Ewes of both breeds will be mated to rams of a 3rd breed (Composite from USDA - Meat Animal Research Center) so that all offspring will have hybrid vigor. The Composite is a wool breed developed from initial crosses of Suffolk, Hampshire, and Columbia. Dorper and Rambouillet ewes were first mated in August of 2004. The first lambs were born in 2005. All male lambs were fed to 130 lbs. and ewe lambs fed to 125 lbs. before being sent to slaughter. The first year's data included reproduction records on approximately 30 ewes per breed. There were no significant differences between breeds for fertility (percent ewes lambing) or number of lambs born or weaned. However, data from a single year's production should not be used to draw a definitive conclusion. This project is scheduled to run for several more years and is expected to produce results applicable to extensive management systems in a range environment.

<b>Table 1. Lamb Production in Dorper and Rambouillet Ewes Mated to Composite Rams (Preliminary First Year Results)</b>		
<b>Trait</b>	<b>Dorper</b>	<b>Rambouillet</b>
<b>Fertility</b>	91	91
<b>Prolificacy</b>	1.29	1.28
<b>Number of lambs weaned</b>	0.93	0.93
<b>Birth weight, lbs.</b>	10.4	10.3
<b>Weaning weight, lbs.</b>	64.9	64.7

#### **Literature Cited**

Notter, D. R., S. P. Greiner and M. L. Wahlberg. 2004. Growth and carcass characteristics of lambs sired by Dorper and Dorset Sires. *J. Anim. Sci.* 82:1323-1328.

Snowder, G. D. and S. K. Duckett. 2003. Evaluation of the South African Dorper as a terminal sire breed for growth, carcass, and palatability characteristics. *J. Anim. Sci.* 81:368-375.