50 Years of the Wyoming Ram Test: How Have Sheep Changed?

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Introduction

Numbers of sheep in Wyoming have declined steadily since the early 1940s. Although there are only 10 percent as many sheep in Wyoming as there were in 1940, the Wyoming sheep industry is alive and well. Range sheep operations predominate in Wyoming, and for many producers, Rambouillet or Rambouillet-cross are preferred. For the past 50 years, production characteristics of white-faced rams have been systematically evaluated in the Wyoming Ram Test with these records representing ideal breed characteristics of the time. Although some changes in the industry over the past 50 years are obvious even to the casual observer, the magnitude of change as well as the production characteristics that remained stagnant within the Rambouillet breed is intriguing.

Objectives

The goal of this research was to document changes that have occurred in the Rambouillet breed over the past 50 years. How market forces may have shaped changes within the industry were also explored.

Materials and Methods

Performance records (n = 3941) from the Wyoming Ram Test from 1961 to 2010 were analyzed to determine how ram size, rate of gain, and fleece characteristics have changed over the past 50 years. This data set is particularly suited for this analysis since the production test has remained relatively stable with predominantly Rambouillet rams from top producers in the region. Although the diet has changed over the years, rams have always been provided an \textit{ad libitum} (at one’s pleasure) diet. Historical market prices were used to determine correlations of production characteristics with potential market forces with a time lag of 0, 2, or 5 years.

Results and Discussion

Even to a casual observer, it is obvious that sheep have increased in size over the past 50 years. With age of rams on test remaining relatively stable, ram weights at the end of the test increased approximately 53 pounds from the early 1960s from 192 to 245 pounds (Fig. 1). This increase is a reflection of an increase in growth efficiency with rams almost doubling their average daily gain from approximately 0.5 to 0.9 pound per day (Fig. 2).
Clean fleece weight increased over this period and is likely a reflection of increased ram size with both characteristics increasing about 25 percent.

Even though a clear drive for increased meat production has influenced breed characteristics and production over the past 50 years, spinning count (a measure of wool fiber diameter) has remained relatively stable with an average spinning count of 62.

Rambouillet rams have a more open face as reflected by a decrease in face wool score, but changes in the presence of body wrinkles was not as apparent. However, wrinkle and face scores are a subjective measure and most likely relative to rams present at any given test such that rams presenting with the most wrinkles would always score a 3 even though total wrinkling has declined.

Average daily gain strongly correlated with feeder lamb price, and it had the strongest correlation with a two-year lag time. Sheep inventory correlated negatively with average daily gain but correlated similarly with a 0-, 2- or 5-year lag time indicating an increase in efficiency occurred simultaneously with a decline in total sheep numbers. However, a cause-and-effect is not implied. Wool price was not correlated to spinning count at any of the time lags investigated.

Rambouillet rams have increased in size over the last 50 years with an increase in efficiency of production. Although clean fleece weight has increased proportionally to ram size, fiber diameter has remained unchanged and did not correlate with change in wool price. This suggests that market influences on white-faced ram selection have largely impacted growth traits while avoiding any negative impact on wool quality.

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