Commercial Range Ram Index – *California Wool Growers Association*

In December, the American Sheep Industry's Let's Grow Committee awarded CWGA one of 15 grants funded as part of infusing more than $200,000 back into the American sheep industry to improve productivity efficiencies. CWGA's grant entitled *Improving Sheep Carcass Quality through the Development of a Range Ram Index Utilizing Ultrasound Genetic Measures* will help to improve sheep carcass quality and increase the practice of genetic selection in commercial range operations through the development of a Range Ram Index that utilizes ultrasound technology focusing on carcass quality characteristics.

The Range Ram Index will utilize ultrasound carcass measurements collected at the 2016 California Ram Sale to measure the expected value return of the heritability of carcass characteristics of a range ram through its progeny. The Range Ram Index will be calculated using the following carcass characteristics: loin eye area, loin depth, fat thickness, and ram weight. Ultrasound technology has been used extensively in the cattle and swine industry but has not been used much in the sheep sector. This technology provides an objective measurement of carcass traits in live animals and has proven to be an important means for the improvement of beef and swine carcass characteristics. Carcass traits are highly heritable and in utilizing range rams (or ewes) with highly desirable carcass traits, a producer can implement changes in progeny carcass traits, such a larger loin eye size, in a relatively short period of time. This ability contributes to increased production efficiency as improvements in lamb carcass qualities can be accomplished more quickly than relying on traditional selection methods that focus on phenotypic characteristics.

Many commercial range operations do not focus on Estimated Breeding Values (EBVs) due to a variety of factors. Largest among them is record management given operation size, production practices such as lot vs. individual animal tracking, ram breeding practices (i.e. two rams in one lot), etc. In addition, collecting consistent ultrasound data can be either a challenge or a virtual impossibility for many commercial operations (e.g., due to lack of facilities or access to ultrasound equipment or changes in location, etc.). The Range Ram Index will provide a tool for producers to use in selecting range rams that do not have previously established EBVs. This will give producers an alternate method to evaluate and range rams that will improve progeny carcass characteristics, ultimately supplying a consumer-desired product, and increasing producer returns.

It is proven in other livestock sectors that the carcass characteristics desired by consumers translate into a higher carcass value and thus return for the producer, a fact that is evident in a value based pricing system. In the industry's effort to improve lamb product characteristics, particularly to reduce fat content and improve consistency, ultrasound measurements can help identify those rams that will sire progeny with carcass traits for lower fat thickness and a higher yielding carcass or a carcass with a larger, more uniform loin eye size. There is a financial incentive for producers to incorporate such genetic information, particularly to terminal sire breeders and those producers that market on a carcass/value based pricing system. These incentives will benefit the industry as whole in producing a more desirable product for the consumer.

This grant project will contribute to the CWGA's mission to ensure the long-term prosperity of the industry by promoting economically viable and environmentally sound production practices. The educational and quantitative aspects of this project provide innovative options for producers to improve lamb consistency and quality, increase production efficiency, help in meeting consumer market demands. This project will directly and indirectly help to improve the quality of range rams offered at the California Ram Sale and improve the quality of lamb produced by California

producers. In the short-term, the impact of this project will benefit producers, but in the long-term it will impact all industry stakeholders and U.S. lamb consumers.