The San Angelo Center serves the people of West Central Texas. It was established as Substation 14 in 1916, with the help of area ranchers, on 3,462 acres located between Sonora and Rocksprings. Initial research was on diseases and genetic improvement of sheep and goats. The substation grew in 1938 with the addition of the 3,160-acre Texas Range Station located south of Barnhart. The Texas A&M AgriLife Research and Extension Center at San Angelo opened in 1972 as a cooperative effort with local citizens, West Texas agricultural producers, and Angelo State University. The Sonora location remains a substation.

The mission of the San Angelo Center is to provide ranching solutions through research efforts to improve sheep and goat production, reverse quail decline, restore degraded rangelands, and provide solutions to juniper and other brush encroachment. These solutions include prescribed fire, brush sculpting, super juniper-eating goats, and using juniper as a livestock feed. Center scientists conducted the longest-running sheep and Angora goat central performance tests in the United States and developed the first vaccine for ovine ecthyma (soremouth).

CURRENT RESEARCH

EVALUATING PRODUCTION TRAITS IN SHEEP AND GOAT BREEDS

The San Angelo Center breeding program has evaluated many breeds, including Dorper sheep and Boer goats, to provide producers with unbiased information on differences in production traits. The program also conducts selection projects to improve economically important traits such as early season breeding in goats and prolificacy in sheep. Because of goat breeding cycles, there is typically an excess of fresh goat meat in late summer and early fall, resulting in lower prices. San Angelo Center researchers are selecting goats that ovulate earlier in the spring to enhance the production of year-round goat meat and allow producers to benefit from the approximately 20% higher prices that exist during the low-volume winter months.

SELECTING JUNIPER-EATING GOATS FOR INVASIVE SPECIES CONTROL AND RUMINANT DIET RESEARCH

Juniper infests over 10 million acres of Texas rangelands, reducing forage production and livestock carrying capacity by 10%–50%. It also increases the potential for wildfire and adversely affects the hydrologic cycle, soil health, and biodiversity. Researchers at the Sonora Station have developed innovative management strategies using prescribed fire and goat browsing to reduce the cost of juniper control over sevenfold compared to mechanical methods, for a savings of over $100 per acre for brush control. Selective breeding was used to develop goats that consume about 15% more juniper than average goats. On the millions of acres of juniper-infested rangeland, that can translate to an increased carrying capacity of about 10%.

Center research has demonstrated that juniper can be used as a roughage source in ruminant diets. If this technology is adopted by one 500,000-head feedlot, it could reduce feed costs about $1.5 million while providing a net profit to the juniper harvester of about $1 million and clearing over 20,000 acres of juniper-infested rangeland at no cost to the landowner.

IMPROVING WOOL MARKETING

The value of wool is determined primarily by mean fiber diameter (MFD) and clean wool yield of greasy wool. In the United States, wool from different growers is often combined into a single lot before being sold to improve marketing efficiency and provide larger, uniform lots of wool. Each bale in these lots must meet American Society for Testing and Materials standards. Because of the large sample size and high price for obtaining results from official methods, marketers use visual appraisal to determine which bales to combine to make a sale lot. Low-cost, rapid near-infrared spectroscopy techniques are being developed at the San Angelo Center that will improve the efficiency of interlotting to ensure uniform quality for buyers and add value to wool for growers.
RESEARCH IMPACTS

• Using juniper-eating goats to graze on the millions of acres of juniper-infested rangeland in Texas could result in an additional net income of $600 for a herd of 100 goats, while increasing the efficiency of goats as a biological control agent for juniper.

• Restoring quail abundance on West Texas rangelands would increase annual revenues to ranchers by 30% and revitalize struggling rural communities by more than $5,000 per quail hunter.

• Technology to increase prolificacy in sheep can result in a 40% increase in lambs weaned per ewe. A 10% adoption rate of this technology would provide an additional $1.4 million in net income to the industry.

• Approximately 1 million acres of Texas rangeland have been improved through the use of prescribed fire, creating greater livestock carrying capacity, more wildlife habitat, better wildfire mitigation, and increased public safety.

SAN ANGELO CENTER

FACILITIES

• The San Angelo Center facilities include 25,024 square feet of office and laboratory space, including the Bill Sims Wool and Mohair Research Laboratory; 51,236 square feet of shop, storage, and livestock barns; and 23,869 acres of rangeland.

• Sonora Research Station – 3,462 acres; 40,326 square feet in 22 buildings.

• Carl and Bina Sue Martin Ranch, Menard – 4,700 acres.

• Texas A&M AgriLife Read Ranch, Ozona – 5,000 acres.

ABOUT TEXAS A&M AGRILIFE RESEARCH

A member of The Texas A&M University System

Established in 1888, Texas A&M AgriLife Research is the state’s premier research and technology development agency in agriculture, natural resources, and the life sciences. Headquartered in College Station, AgriLife Research has a statewide presence, with scientists and research staff on other Texas A&M University System campuses and at the 13 regional Texas A&M AgriLife Research and Extension Centers. The agency conducts basic and applied research to improve the productivity, efficiency, and profitability of agriculture, with a parallel focus on conserving natural resources and protecting the environment. AgriLife Research has 550 doctoral-level scientists, many of whom are internationally recognized for their work. They conduct hundreds of projects spanning many scientific disciplines, from genetics and genomics to air and water quality. The annual economic gains from investments in Texas’s public agricultural research are estimated at more than $1 billion. Through collaborations with other institutions and agencies, commodity groups, and private industry, AgriLife Research is helping to strengthen the state’s position in the global marketplace by meeting modern challenges through innovative solutions.