



Sustainable Sheep & Goat Production

This project has made sheep and goat production more sustainable by identifying farming practices, technology, and animal breeds that help farmers overcome challenges presented by gastrointestinal worms and low quality forage systems.

Who cares and why?

Over the past year, the number of sheep and goats raised for meat and dairy in the U.S. has declined. However, the U.S. continues to import more goat and lamb meat than it produces for domestic consumption, indicating there is still demand for these products, especially from ethnic populations and niche markets. The top challenge for sheep and goat production in the southeastern U.S. is the prevalence of gastrointestinal nematodes. These parasitic worms are often difficult to detect and can kill animals rapidly. Furthermore, some parasite populations have developed resistance to available dewormer treatments. Feed costs also limit sheep and goat production. Allowing sheep and goats to feed primarily by foraging reduces the amount of money farmers spend on grain feed and allows them to market meat and milk as grass-fed. Though forage is abundant and hardy in the southeastern U.S., low-quality forage species that grow during summer months often do not meet the nutritional needs of sheep and goats, limiting their growth and reproduction. Research is needed to identify specific animal breeds that perform well in forage-based systems. Complimentary methods of parasite control for animals feeding primarily on forage are vital for the sustainability and profitability of sheep and goat farms in the southeastern U.S.



By raising sheep and goats primarily on forage, farmers can reduce feed costs; however, certain plants species are more nutritious than others, and certain breeds of sheep and goats are better suited for foraging. Top photo by Robert Godfrey, University of the Virgin Islands. Bottom photo by Susan Schoenian, University of Maryland.

What has the project done so far?

The SCC-81 project has fostered collaboration among scientists from 18 universities, two USDA stations, sheep and goat industry groups, and farmers. Vast collaboration has allowed the project to leverage funds well over one million dollars to support research on sustainable sheep and goat farming. Over the past year, SCC-81 scientists have found ways to control gastrointestinal nematodes that decrease reliance on chemical products. These methods include selective deworming, better forage management and grazing options, and animal breeds that are resistant or resilient to gastrointestinal nematodes. For example, researchers have found that pine bark, a common by-product of the timber industry in the southeastern U.S., can reduce the number of parasite eggs, improve average daily weight gain, and impact carcass traits in goats. Researchers have identified a number of other plants (such as cowpea, forage soybean, pearl millet, and sericea lespedeza) that can be nutritious warm season forages. Furthermore, research has indicated that soybean hulls, peanut skins, and dried distiller grains can be used as less expensive feeds to supplement animals raised primarily on pastures. Focusing on

parasite control methods, other SCC-81 researchers have worked with farmers to determine breeds that could be more resistant to gastrointestinal nematodes. Researchers have evaluated the performance of purebred and crossbred sheep and goats raised in forage-based systems across the southeastern U.S. SCC-81 researchers have published nearly 100 peer-reviewed articles and 11 books and book chapters. Extension professionals have shared research results and recommendations to farmers and industry members through workshops, websites, trainings, field days, and other outreach events.

Impact Statements

Helped producers develop sheep and goat production systems that are sustainable and profitable.

Provided genetic information used by researchers and producers to select and breed animals less likely to become infected by gastrointestinal parasites.

Provided natural and chemical products that help organic and conventional sheep and goat farmers control parasites. These products have satisfied customers and are in high demand.

Increased the knowledge and skills of thousands of researchers, farmers, and other stakeholders, leading to more successful adoption of sustainable sheep and goat farming practices and technologies.



SCC-81 research has indicated that purebred St. Croix White lambs and ewes (the solid white sheep in the above photos) have better parasite resistance and maternal performance than animals that are a cross between Dorper and St. Croix White breeds (the black and white animals in above photos); however the crossbred animals have better rates of gain and carcass traits. These study results help farmers select animals that will be healthier and more profitable. Photos by Robert Godfrey, University of the Virgin Islands.

What research is needed?

More research is needed on economically important sheep and goat breeds in order to select for valuable maternal traits, post-weaning growth, meat production, and parasite resistance. Researchers are also looking for ways to validate simple artificial insemination of sheep and goats using fresh or frozen semen. Researchers also need to continue to test the effectiveness of alternative dewormers for use in sheep and goats. In addition, developing appropriate year-round forage feeding systems requires more in-depth studies.

Want to know more?

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