Shopping by the Numbers – *National Sheep Improvement Program*

The process of buying a ram isn't what it used to be. New tools for flock genetic improvement have changed the landscape and expanded the possibilities.

"When you look at a ram, the majority of what you see is influenced by non-genetic factors, such as age, nutrition, and fitting," says National Sheep Improvement Program (NSIP) Director Rusty Burgett, "It's the 25 percent you can't see - the genetic part - that is actually passed down to the offspring. Those genes you can't see are the foundation for lambing rate, growth rate, composition; the things that determine profit for a sheep operation."

NSIP is leading the way into the new age. With its science-based, industry-tested measurements of heritable traits, the American Lamb Industry Roadmap and Let's Grow initiative have embraced NSIP as a means of improving the productivity and profitability of the U.S. sheep flock.

The program was established to provide estimated breeding values (EBVs) to seedstock producers. EBVs assign a number value to the genetic merit of a breeding sheep for certain production traits, allowing for quick and easy comparisons between rams. There are EBVs for body weight at different ages, carcass measurements, reproduction, parasite resistance, and wool.

Now, NSIP has a new, convenient tool available to help the *commercial* producer utilize the technology. A 14-page Ram Buying Guide is available in downloadable PDF form on the NSIP website and will be available in print at select events around the country. The guide offers explanations of EBVs and data indexes, directions on their use, and a worksheet to help producers collect and organize data and priorities.

"It's time for commercial producers to start using EBVs in their selection of rams," says Burgett. "You don't have to be enrolled in the program to take advantage of the technology, you can just use this guide to help you select rams from NSIP breeders that will improve productivity."

Getting the right ram

Few decisions are as important to the sheep producer as selecting a breeding ram. More than 90 percent of a flock's genetics are contributed by the ram over four generations. With EBVs commercial producers are making sure what they see is what they get. Traits like reproduction, parasite resistance, and wool quality require decades of work to build up a flock's genetic potential.

"Using EBVs is a much stronger selection tool than raw data or ram test performance because EBVs compare an animal's performance not only to the others in the pen, but also to all of its relatives," explains Burgett. "Comparing a ram's performance to all of its relatives in other flocks allows you to isolate differences that are truly genetic and those that are environmental. There is far too much on the line to take a gamble on the future of your flock."

The guide provides a three-step process to ram selection based on NSIP EBVs.

The process begins with evaluating a flock's current production by using production records for lambing and weaning rates, average weaning rate, average loin area, average back fat thickness, average fleece weight and average fiber diameter.

"Every flock in the U.S. is different," says Burgett. "This process allows each producer to fine-tune his or her genetic selection strategy to improve production. Western whiteface flocks will be more interested in reproduction and wool characteristics than carcass traits. Southern flocks will need to focus on parasite resistance."

Next, the producer uses that data to establish goals for improvement, as Burgett further explains: "It has been outlined very clearly by our industry leaders that we need to improve productivity in *every* flock if we are to have a sustainable industry into the future. Setting goals gives a flock a benchmark to work toward, a measurement of genetic progress as it improves." For example, the producer may have a lambing rate of 100 percent, or one lamb per ewe. His goal may be to increase that to 120 lambs from 100 ewes, or 120 percent.

Once goals for specific traits are established, it is important to set priorities.

"Each flock should prioritize improving the traits that determine profitability," says Burgett. "For most flocks, it will be important to increase number of lambs weaned per ewe since the majority of revenue comes from lamb sales. But each flock is different and has different goals."

It is possible to make progress in multiple traits simultaneously, but faster genetic progress will be realized by focusing on one or two traits, rather than five or six at once. So, setting priorities is a crucial part of the process.

The third step outlined in the guide is ram selection. The key to using EBVs is easy comparison between rams. NSIP reports, available on the website, also allow for comparison to breed average and sheep in related flocks.

NSIP also uses indexes, EBVs for multiple traits combined into one number. The Targhee and Rambouillet breeds, for example, utilize the Western Range Index, which balances number of lambs born, growth potential and fleece characteristics all into one number for easy comparison.

The Ram Buying Guide provides worksheets to simplify the process. And help is readily available by contacting Burgett.

A new way to buy

"This is a different way of selecting rams than what most are used to," he says. Burgett was brought on board to increase the U.S. sheep industry's awareness and understand of the use of EBVs. The ASI Let's Grow Program, the American Lamb Board and the National Sheep Industry Improvement Center are all aware of the benefits this technology can bring to the industry and are helping NSIP spread the message.

With the emphasis on genetic improvement long held by other forms of livestock production now taking hold in the sheep industry, Burgett sees those not taking advantage of the technology at risk of being left behind.

"Other livestock industries here in the U.S. like beef and dairy, as well as our sheep competitors across the pond, have been using this technology for decades very successfully. All of these

industries have increased production of their herds while decreasing animal numbers. It's time we start using this technology."

In addition to information, the NSIP website includes a listing of seedstock producers in the program; those who sell stock with EBVs. NSIP also offers a Facebook exchange at NSIP Marketplace. Buyers and sellers can post on the site to increase marketing potential for sheep with available genetic data.

"NSIP's goal is to help improve productivity throughout the industry by providing this genetic analysis service," says Burgett. "For this technology to fully work, seedstock producers should enroll in NSIP, then commercial producers should be buying their genetics for improvement from those flocks based on EBVs. This will allow the whole industry to move forward. We are "The Genetic Foundation for a Profitable U.S. Sheep Industry."

More information on the National Sheep Improvement Program can be found at www.nsip.org