

What is NSIP?

The National Sheep Improvement Program (NSIP) is a nonprofit organization established in 1986 by sheep producers and animal scientists to develop a tool that U.S. sheep producers can use to make genetic selection decisions based on commercially important traits.

This program is administered by a volunteer board of directors and represents all breeds of U.S. sheep that want to participate. Each breed type is evaluated separately in the NSIP.

Technology that generates predictions of offspring performance based on performance records is used by nearly all other livestock species to aid in genetic selection for highly productive animals. The NSIP works with the Australian company Sheep Genetics. Sheep Genetics provides the data submission software and performs the analysis that generates estimated breeding values for the U.S. producers enrolled in the NSIP.



Testimonials

In the last few years, EBVs have really caught on and now, the first and sometimes the only questions buyers ask are: "What is your best indexing sheep?", or "Which has the best ribeye?", or "Which will increase my number of lambs born?" It would be difficult to sell rams at the Montana Ram Sale without EBVs.

*Chase Hibbard
Targhee Producer
Helena, MT*

We have increased the genetic potential for 120 day weight of our average Suffolk at Culham & Stevens and Michigan State University by 10 to 15 lbs. I cannot imagine ever using a ram again that does not have a genetic evaluation.

*Alan Culham
Suffolk & Dorset Producer
Weberville, MI*

EBV's allow us to quickly and confidently have a significant, positive impact on a very large percentage of our flock. It is the greatest performance insurance we could ever buy. Using EBV's allows us to select breeding stock based truly on performance and not just physical appearance.

*Isaac Matchett
Commercial Producer
Charlevoix, MI*



For more information, visit our website:
www.nsip.org

National Sheep Improvement Program

A Profit Driven
Genetic Selection Tool



What are EBVs?

Estimated breeding values (EBVs) represent the genetic value of an animal based on the prediction of future offspring performance. These values are calculated from the animal's performance for all genetically related traits and the performance of relatives for those traits.

More specifically, performance data of an animal is compared with the performance of all other animals reared at the same time and in the same environment. Therefore, EBVs are generated from differences from the means of each contemporary group.

This approach allows the genetic comparisons to be made across years within a flock and between flocks that contain related sheep.

Animal EBV values are differences from their respective breed's average. If flocks are not genetically connected to other flocks, then EBVs are differences from their own flock average. When related sheep are used in different production systems and environments, the EBV comparisons are increasingly robust.

Available EBVs

Growth Traits

- Birth weight
- Weaning weight
- Maternal weaning weight
- Postweaning weight
- Yearling weight

Reproduction Traits

- Number of lambs born
- Number of lambs weaned
- Scrotal circumference

Carcass Traits

- Loin muscle depth
- Fat depth

Wool Traits

- Fleece weight
- Fiber diameter
- Staple length

Parasite Resistance

- Worm egg count

Indexes

- Carcass Plus Index
- USA Hair Index
- USA Maternal Index
- USA Range Index

How to use EBVs

Most flocks will have different needs or take different approaches to improve productivity. Selection of breeding sheep should emphasize the economically important traits for the operation.

For example, to improve pounds of lamb weaned, emphasis should be placed on positive EBVs for weaning weight and the number of lambs weaned.

Expected offspring performance is based on the average of the sire and dam's EBVs; therefore, the value of a breeding animal to the flock is represented by half of its EBV.

If a ram has a EBVs of 2.75 for weaning weight and 10 for the number of lambs weaned, then its offspring are expected to be 1.375 kg (3 pounds) heavier than breed average, and its female offspring are expected to have a 5 percent higher lamb crop than the breed average.

If the ram sires 50 lambs per year for three years, the flock will wean 450 more pounds of lamb. If 50 of his daughters are retained for four years, they will wean 10 more lambs in their lifetime.

Indexes are developed for different breed types and rank the most important traits that impact the breed type. Indexes are designed to calculate one value that selects for multiple traits.



www.nsip.org