

Targhee

NSIP Notebook

June 30, 2003

Number 4

The 2003 Targhee National Genetic Evaluation

David Notter and Larry Kuehn
Department of Animal and Poultry Sciences
Virginia Tech

Introduction

Genetic analysis of the 2002 Targhee lamb crop is now complete, and results are available for distribution to participating NSIP Targhee breeders. Genetic evaluation reports will be similar to those distributed last year. However, staple length EPDs have now included in the main EPD report.

The Data

Data for the 2002 lamb crop included records on 1,758 breeding ewes from 15 flocks: 12 from Montana and one each from Michigan, Minnesota, and Oregon. Records were received for 2,705 live lambs produced by 69 Targhee rams. Following editing, valid records were received for 603 60-day weaning and/or preweaning weights, 1,950 120-d weaning weights, 480 yearling gains, 865 fleece weights, 574 fiber diameter (fleece grade) measurements, 347 staple lengths, and 1,573 litter sizes. Over the past few years, more and more yearling weight records have been falling outside the target age window of 335 to 395 days, generally because of animals weighed at younger ages. Beginning this year, the width of the yearling weight window was increased to accept animals weighed between 305 and 425 days of age. However, animals weighed before 335 or after 395 days are placed in different contemporary groups. This change resulted in the addition of 1,113 valid yearling weights from prior years and may have caused occasional changes in yearling weight EPDs for individual animals. However, we believe these additional records are valid indicators of yearling weight and adult size.

The entire NSIP Targhee across-flock database now contains records from 40 flocks with 12,620 60-day weaning and preweaning weights, 23,695 120-day weaning weights, 7,147 yearling gain records, 13,215 fleece weights, 9,334 fiber diameter measurements, 7,704 staple lengths, and 22,368 litter sizes. EPDs were calculated for a total of 39,761 animals, including 10,931 breeding ewes and 870 sires.

Means for reported traits are shown below. Weaning and preweaning weights (both 60- and 120-day) were adjusted to a single birth and rearing, adult dam, and ewe lamb basis. Yearling gains were not adjusted, but male and female lambs were placed in separate contemporary groups. Yearling fleece weights and staple lengths were adjusted to an age of 365 days. Fleece weights and staple lengths for older animals were adjusted to an adult animal and 365-day shearing interval basis. Fleece grades for yearlings did not receive any adjustments. Fleece grades for older animals were adjusted to an adult animal basis. For fleece traits, yearling and older animals, and males and females were placed in separate contemporary groups. Litter sizes were adjusted to an adult ewe basis.

Trait	Mean
60-day adjusted weaning/preweaning weight	55.1 lb
120-day adjusted weaning weight	87.9 lb
yearling gain (120 to 365 days)	.28 lb/day
fleece weight	8.6 lb
fiber diameter	22.1 microns
staple length	3.35 in
litter size	1.73 lambs

Complete data on the 2001 Targhee lambs were received at the genetic evaluation center on May 19, 2003. EPDs were returned on June 27.

EPD Reports

This year's EPD report has essentially the same format as last year's report. Animals in the spreadsheet are listed in the following order: breeding ewes, yearling ewes, breeding rams, and yearling rams. The listing should contain all breeding animals listed on the preprinted data entry spreadsheet, any breeding animals that were added to inventory, and all surviving lambs from the current lamb crop. Animals that were culled or died will be identified; EPDs will be provided for these animals, but they will not appear on next year's spreadsheet.

Genetic Trends in the Targhee Breed

Patterns of change in EPDs since establishment of NSIP in 1986 are shown in Figures 1 and 2. These results document the traits that have received emphasis in participating Targhee flocks. Each point represents the average EPD of all animals born in each year since 1986. Consistent and significant changes were observed for weaning weight and yearling weight. Maternal milk EPDs increased significantly from 1986 to 1998, but have been flat since 1998. Changes in EPDs for percent lamb crop were not significant over the entire period, but EPDs for this trait have increased consistently and significantly since 1989. Fiber diameter EPDs have consistently gone down, while there have been small, but consistent increases in fleece weight EPDs since 1993. These patterns are consistent with the primary role of the Targhee as a dual-purpose breed, attempting to make balanced improvement in a number of economically important traits.

Changes in EPDs in Figures 1 and 2 are not particularly large, approaching 0.1% per year for weaning weight, yearling weight, and fiber diameter. Changes in EPDs for number born and fleece weight also reached 0.1% per year in the latter half of the period. These values could be increased by more intense selection. However, the observed trends in EPDs are generally similar to those reported for beef cattle and represent gradual and consistent changes in the breed as a whole. By comparison, the average annual increases in EPDs for weaning weight and yearling weight for the five largest U.S. beef breeds range from about 0.1 to 0.3% per year.

Figure 1. Genetic Trends in Growth and Reproductive Traits

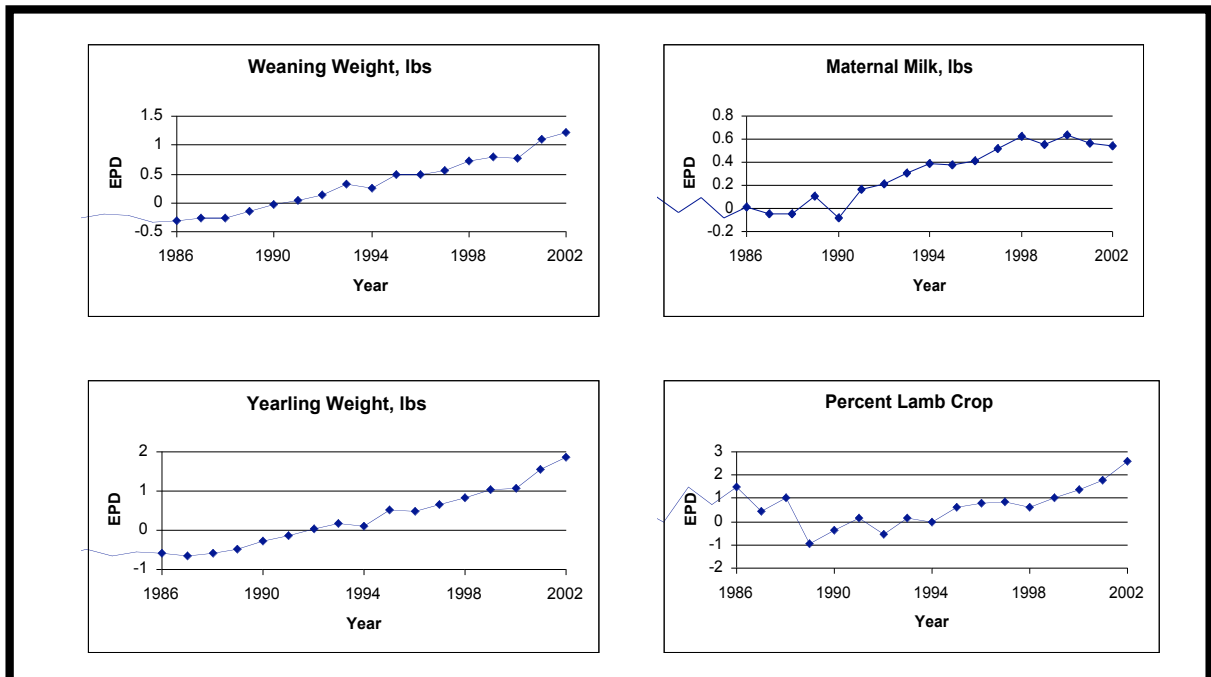
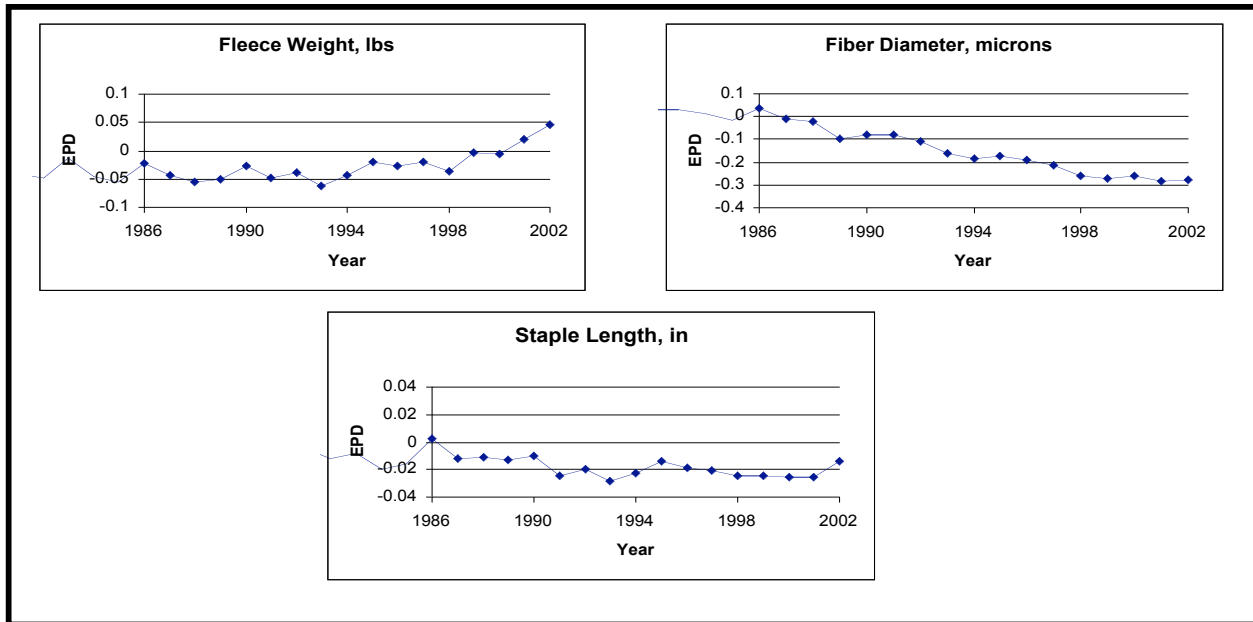


Figure 2. Genetic Trends in Fleece Traits



The 2003 Targhee Sire Summary

The 2003 NSIP Targhee Sire Summary is also now available for distribution to breeders and other interested parties. In order to be eligible for the Sire Summary, a ram must have an accuracy value of at least .30 for weaning weight, yearling weight, or maternal milk or of at least .40 for fleece weight, staple length, or fleece grade. This year's sire summary contains EPDs for 247 rams. From these, only the 112 rams born after January 1, 1994 were listed in the main sire summary.

Submitting Data for Next Year

There will be no major changes in submitting data for next year. Each NSIP Targhee breeder will again receive a preprinted data entry spreadsheet for reporting data. All active animals from the flock, including breeding ewes, ewe lambs, breeding rams, and ram lambs should appear on that spreadsheet. A new version of the data-entry spreadsheet has been released this year, but most changes are minor. Only one is likely to be important for Targhee breeders. The changes include:

- Addition of a lamb livability code of '5' for lambs that die between 2 weeks of age and weaning. This code will allow us to do a better job of tracking lambs that died before weaning and evaluating ewe productivity. **This is the only change that should be specifically noted by Targhee breeders.**
- A field to record an end-of-breeding season (ram-out) date. This will be used mainly for Polypay flocks that practice accelerated lambing. Recording of ram-out date is NOT required.
- A 'percent purebred' field, to be used by breeds such as Katahdin, that have grading-up programs and record crossbred animals.
- A field to record codon 171 genotypes for scrapie susceptibility. We expect this field will be used mainly by Suffolk breeders, but Targhee breeders may use it if they wish.

Again, use of the preprinted spreadsheet to report data is mandatory. Errors in animal identification (birth dates, tags, registration numbers, parents) can be corrected as needed and newly registered animals can have their registration numbers added. Newly purchased animals can be added at the bottom of the spreadsheet with identification information and performance records.