

NSIP Meeting

Thursday – July 14, 2022

7 p.m. CST

Minutes submitted by Lisa Paris Weeks

Attendees: Matt Benz, Kristen Bieber, Rusty Burgett, Zach Meinders, Lynn Fahrmeier, Cody Hiemke, Tom Hodgman, Carol Heupel, Ron Lewis, Jim Morgan, Brett Pharo, Brenda Reau, Bill Shultz, Curt Stanley, Jake Thorne, Todd Taylor, Lisa Weeks

Agenda:

- Lynn Fahrmeier called meeting to order.
- Secretary Report
 - Brett Pharo moved to accept the May minutes as submitted, seconded by Jim Morgan. Motion passed.
- Treasurer Report
 - Presented by Rusty Burgett (report attached)
 - Membership renewals continue to flow in. Though membership numbers are steady, the size of the flocks is decreasing.
 - Carole Heupel moved to approve the report, seconded by Jim Morgan. Motion passed.
- Program Director Report
 - Presented by Rusty Burgett (report attached)
 - Providing assistance on data entry for new members.
 - In discussion with LambPlan on new service contract.
 - When LambPlan switched to their new platform, all flock connection data for White Dorper was negatively impacted.
- Technical Committee
 - Presented by Ron Lewis (report attached)
 - Sheep GEMS is progressing but the project needs more participating flocks in the other three breeds: Suffolk, PolyPay, and Rambouillet
- Sale Committee Report
 - Presented by Matt Benz (report attached)
 - The Spencer sale will have an online catalog. Currently 150 sheep for 135 lots.
 - The education sessions are almost confirmed.
 - One farm tour is confirmed and working to secure a 2nd farm.
 - Appreciation goes out to Jerry Sorenson for working overtime to support this sale.
 - The replacement ewe sale NSIP earns 0.5% of the 4.5% commission. The NSIP online sale, NSIP earns 5%.
- Convention Update (Rusty)
 - Partnering again with the Genetic Stakeholders Committee, NSIP, and Sheep Genetics USA.
 - There will be six hours scheduled for speakers and presentations.
 - Ideas for topics:
 - How to use data (GEBVs) in a commercial setting
 - Solar Grazing
 - IGG Impact from research by Dr. Scott Bowdridge at WVU.

- Curt Stanley updated the group on the \$3.4 million grant at NDSU: \$2 million of that will go toward facility upgrades.
- Next Meeting will be Thursday, September 8 @ 7 p.m. CST.
 - Curt Stanley moved to adjourn, seconded by Jim Morgan. Motion passed.

NSIP Treasure's Report

July 13, 2022

Bill Shultz

June 30th ended our 3rd quarter for 2022 with total equity of \$80,890. That amount includes \$63,556 in the bank and \$17,334 in receivables with no liabilities. Profit for the year so far is \$26,159. That compares to end of 3rd quarter 2021 total equity of \$94,060, \$13,873 in liabilities and a profit for the year of \$64,250. Much of that difference is in several 2020 enrollment fees being paid in 2021 and in the timing of data fee invoices remitted to MLA.

In general, we are on budget with no unanticipated costs or income. The End of Year financials will provide a much clearer picture when a full complement of both receipts and invoices are on the books.

Membership numbers are tracking close to last year with 3rd quarter 2022 paid members of 218 compared to 214 for 2021. Total membership revenue has slipped slightly due to a smaller lower average revenue per membership of about \$10 (mid \$240's from the mid \$250's). Records indicate for 2022 that about 20% of our members pay less than \$150 in enrollment fees and another 20% pay between \$150 and \$200 in fees.

Genotyping is running slightly ahead of last year with 1,768 samples submitted in 2022 and 1,674 in 2021 based on recorded revenue. Sale revenue is still unclear as we await income from the Center of the Nation Sale and the online sales.

3rd quarter financials are included in my report.

NSIP Director's Report
July 13, 2022

The majority of my time recently has been working with new producers to get set up and entering data. I've done several individual Zoom meetings with new and existing members to help set up Pedigree Master, begin entering data and troubleshooting problems with existing members. We've also had a few members that enrolled years ago and never participated that recently re-joined.

Last month I was able to attend the NC-214 efficiency of sheep production research meeting in Clay Center, NE. There is a lot of exciting research being done at universities across the country and the majority of them are using NSIP as part of their programs. Earlier this week, I met with Dr. Katherine Petersson from University of Rhode Island to start wrapping up a NE-SARE grant which helped promote the use of NSIP in the region and we are planning additional workshops this fall. Additionally, she would like to submit a follow up grant application to continue these efforts and expand the reach/scope of the project.

Have also been relatively busy receiving and processing samples for genomic evaluation. In June, we submitted 660 TSUs for genotyping of Polypays, Suffolks, Katahdins, and Black Welsh Mountain Sheep. To date, we have 10,321 genotypes on file. Of those, 85.5% are for Katahdins, 7.9% are Rambouillet, 3.5% are Suffolk, 1.4% are Polypay, 1.1% are Black Welsh Mountain and 0.6% are White Dorpers. I have a few hundred more that will be going in next week for genotyping and several are for Ron's GEMS project.

On Monday of next week, I will be meeting with the manager of Sheep Genetics to discuss the updated service contract between NSIP and MLA, when updates will be coming to the NSIP databases as well as some recent issues with the Dorper/White Dorper evaluation.

Coming up I'll be attending the Center of the Nation NSIP Sale at the end of this month and will also be helping with a presentation at the National Ram Sale in October in Heber City, UT. We will also begin planning the next Genetics Symposium for next year's ASI convention along with ASI's Genetic Stakeholders and Sheep Genetics USA. If you have ideas for a theme, presentation topics and speakers to invite, please let me know and we'll work out the schedule. I also plan to host another round of "Pedigree Master for Beginners" type workshops via Zoom for new members and would like to finish up documents/materials for the "Official Policies of NSIP" and information on the importance of contemporary groups as those always seem to be a topic of interest with the members.

NSIP Technical Advisory Committee Report

July 2022

Sheep GEMS update

Sheep GEMS is well underway with performance data on robustness and climatic resilience traits being recorded in the participating Innovation Flocks. Genotyping of rams, ewes, and lambs in those participating flocks also is underway.

Still, the R&D team needs help from the NSIP Board of Directors. The target was to recruit at least 20 Innovation Flocks from NSIP members in each of the Katahdin, Polypay, Rambouillet and Suffolk breeds. That number has been surpassed in Katahdin. However, currently there are 12 Polypay, 10 Rambouillet, and 9 Suffolk flocks participating. Assistance in recruiting more flocks for this breeding season would be appreciated.

As part of the recruitment effort, Tom Boyer, the Chair of the Project Advisory Board for Sheep GEMS, and the R&D team were interviewed by Sheep Genetics USA for an article in the upcoming August issue of the Sheep Industry News on genetics. The content of that article provides sheep producers with a comprehensive overview of Sheep GEMS, and contact information if they wish to learn more.

Revision of the US Hair Index

Genomic-enhanced estimated breeding values (GEBV) were introduced to the NSIP genetic evaluation of hair sheep starting in October 2021. As part of that implementation, heritabilities and correlations were re-estimated for all traits included in the genetic evaluation. There were reductions in the heritabilities of several key traits, and changes in values of the correlations among traits. This impacted the calculation of the US Hair Index. Therefore, based on discussions with the NSIP Executive and Board of Directors, and NSIP Katahdin producers, reporting of the US Hair Index was temporarily discontinued until it could be revised. In mid-June 2022, the revised US Hair Index was reintroduced.

As background to this endeavor, the US Hair (and US Maternal) Index predicts genetic merit for total pounds of lamb weaned per ewe lambing based on EBV for four other traits. Specifically, it positively weights EBV for weaning weight (WWT), maternal weaning weight (MWWT), and number of lambs weaned (NLW). It also places a negative weight on EBV for number of lambs born (NLB) thereby favoring ewes that wean large litters without losing any lambs. A ewe that produces twins and weans them both will be favored over a ewe that has triplets but weans only two lambs. However, ewes that wean triplets will have higher index values than ewes that wean twins.

The US Hair Index was based on research by Bindu Vanimisetti during her PhD studies at Virginia Tech supervised by Dave Notter. The data used were from Katahdin ewes in NSIP flocks lambing from 2001 to 2004. Now, nearly two decades later, 5-times more data have accumulated on Katahdin sheep. In the analyses leading to the revised index, information on

10,852 ewes with 20,318 litters producing 37,012 lambs were used. The revised index reintroduced is constructed as:

$$\text{US Hair Index} = 100 + (0.1282 \times \text{WWT EBV} + 0.4071 \times \text{MWWT EBV} - 4.4013 \times \text{NLB EBV} + 22.1786 \times \text{NLW EBV})$$

Importantly, this index is not new but simply updated. Still, the changes in weights affected index values and therefore, potentially, animal rankings.

That possibility was tested. In Figure 1, the rankings based on the original and revised index are compared. There was very little change in the rankings, with a concordance of over 93%.

The most substantial change was the spread of index values. With the revised index, that spread was reduced, reflecting the re-estimated values of the heritabilities and correlations introduced last October.

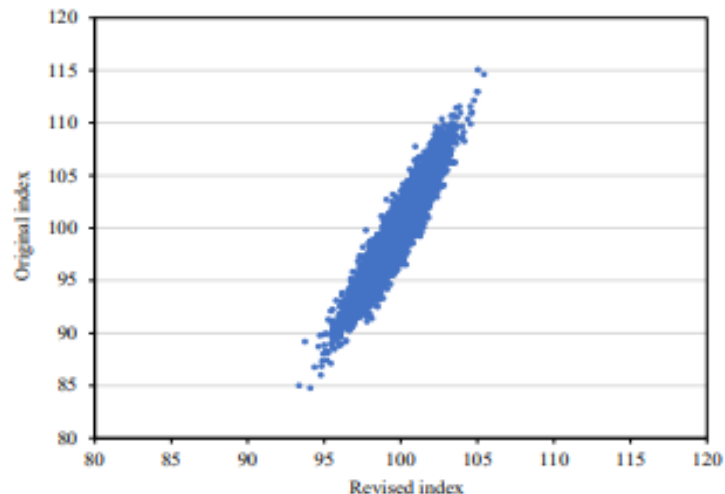


Figure 1. Plot of original versus revised US Hair Index scores. The index values plotted were from the 10,852 ewes contributing data to the analyses.

Since the index predicts EBV for total pounds of lamb weaned per ewe lambing, the original and revised index scores were compared with EBV obtained directly for that trait. The agreement between the revised index score and EBV for total pounds of lamb weaned per ewe lambing was nearly exact. With the original index score, however, those EBV were over-predicted by two-fold. The revised index score therefore provides a more reliable estimate of genetic merit for total pounds of lamb weaned per ewe lambing. This does not mean the original index was in any sense incorrect. It does mean that with the accumulation of much more data on Katahdin sheep, estimates of heritabilities, correlations and the index benefitted from being updated.

A benefit of the US Hair Index is to assist NSIP producers in their selection decisions. As an example, consider a pair of ewe lambs with index values of 103.2 and 101.1. Once entering a flock, we expect the ewe lamb with the higher index value to wean 2.1 kg (4.6 lb.) more each lambing than the ewe lamb with the lower index value. Retaining the higher indexing ewe lamb as a replacement, would clearly improve flock productivity.

Ron Lewis
NSIP Technical Advisory Committee Chair
July 14, 2022