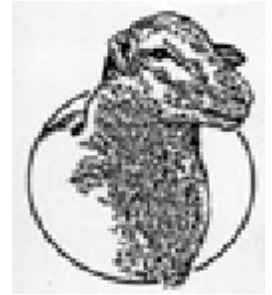




## KATAHDIN NSIP BREEDER'S GROUP

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### COLLECTING AND SUBMITTING DATA FOR KATAHDIN NSIP EVALUATION (10/04 version)

Information to help you collect accurate & useful data

1. *What basic information is needed?* i) Birth wt, ii) 60 day wt, iii) 120 day wt, and iv) number of lambs born per ewe, (lambs can be weighed as a group within a 15-30 day window of the target 60 and 120 day weights.) Data collection is not hard, but there are a few key things in the collection that will improve accuracy and the quality of data you receive.
  - a. **Track the date the service sire was put in and taken out of the breeding flock** - This data will be used for the development of an accelerated lambing EPD in the future.
  - b. **Birth Wt** - Not technically required, but very useful. Highly recommended (SEE NOTE BELOW). This allows the 60 day growth potential to be calculated with much more accuracy.
  - c. **60 day wt** - This wt does not need to be taken exactly on 60 days. The key requirements are i) before weaning, ii) between 45 & 90 days of age.
  - d. **Weaning wt** - If you do not wean at 60 days of age, you will also need to collect a separate weaning wt.
  - e. **Postweaning wt** - This wt does not need to be taken at exactly 120 days of age. The key requirements are i) at least 30 days after the weaning wt and ii) between 90 and 150 days of age.
  - f. **Tracking rearing conditions** - Track which lambs are bottle fed, which lambs are grafted on to another ewe, which ewe they are grafted on to, when lambs die or are still born, which pen/pasture they are raised in.
  - g. **Optional - FEC-EPD** - Fecal Egg Count - Expected Progeny Difference. If you are interesting in being involved in identifying Katahdin sires that have lambs with superior parasite resistance, contact Jim Morgan.

**Basically, you are collecting information that many of us as breeders are doing already. The above information is all you really need to know. Below is more discussion that will help. Don't be put off by the length, but just read and think about it over time.**

1. *Other information you need to know to increase quality of information returned by NSIP.* The ability of the NSIP computer to track and evaluate the performance of your sheep is strongly affected by the following factors. There is a discussion of contemporary groups later in this handout. Contemporary group of lambs being evaluated should
  - a. Have lambs from at least two service sires in each contemporary group.
  - b. Twenty to Twenty-five lambs/sire (40 lambs from four sires would be excellent)
  - c. Have at least one of the service sires from a flock with NSIP records. Genetic connections can be made with ewes, but they have much less strength and accuracy.

- d. Two-Four years of good data in the Katahdin NSIP project. The numbers of lambs, quality of data and the strength of genetic connections to enrolled flocks will affect the time involvement necessary to start receiving quality data from NSIP. Good and useful EPDs from your flock will not happen in one year.
  - e. Smaller flocks with single service sires or fewer numbers of lambs per sire can still submit and receive useful genetic evaluation of their flock. Most likely the accuracy will be lower and they may not be able to use their EPDs to compare to animals outside of their flock.
1. *Opinion:* Good use of EPDs will be of most benefit to those breeders who are trying to improve the genetic quality and performance potential of their flocks. The enrollment in NSIP and the use of EPDs does not guarantee a financial benefit for those breeders whose primary and/or only aim is an immediate financial return. We don't want to promise you up front that your involvement in NSIP will make you a lot of money. Selling sheep is often based more on the quality and quantity of a breeder's promotional efforts rather than the quality of their sheep.
  2. Data from Registered, Recorded and Unregistered Sheep - NSIP is designed for use with registered sheep, especially for the rams. Animals are tracked between flocks by their registration number and not their tag number. So, more information will be obtained from the use of Registered and Recorded animals. Ewes that are not registered or recorded and percentage Katahdins can be used and do provide a very important part of the database for many flocks. It is important to know the percentage Katahdin of each animal so that the effects of heterosis (hybrid vigor) can be included in the evaluation. It is important to use mostly KHSI Registered or Recorded Katahdins Rams, but not as important for the ewe flock. Several enrolled flocks have a few to a majority of commercial ewes and are receiving excellent data.
  3. More in-depth discussion of data collection.

**Track the date the service sire was put in with the ewes and taken out** - This data will be used for the development of an accelerated lambing EPD in the future. Even, if the ewe does not lamb, putting this information in will help complete the database. The date is also used to help catch input errors. (In the past, individuals have entered the date sire in and the date lamb was born and it was only 90 days. It turned out the birth date of lamb was wrong)

**Birth Wt** - Not required. But highly recommended. We would prefer not to accept data from lambs that don't have birth weights. The birth weight increases the accuracy of the 60 day weaning wt EPDs. A very worst case scenario is the following; Two lambs who weigh 25 lbs at 60 days, but one had a birth wt of 6 pounds and the other had a birth weight of 12 pounds. There is a significant error if both lambs are treated the same and can result in an average that is 5-25% off, depending on the 60 day wt of the lamb. The larger the 60 day weaning wt, the less accuracy is compromised by not having birth weight.

**60 day weaning wt** - This wt does not need to be taken exactly on 60 days. The key requirements are i) before weaning, ii) between 45 & 90 days of age. If possible, you should select a date that maximizes the number of lambs in one rearing group that are between 45 & 90 days of age and before weaning. The best data and accuracy will come from the lambs weighed between 45-75 days of age, second best accuracy from 45-90 days of age and third best is 30-90 days.

E.g. - If a flock owner were to weigh one large group of lambs, in 3 separate groups, 7 days apart, then each of those groups of lambs have had a different environment. It may have been 10 degrees warmer, the hay fed to the ewes may have changed in quality, the grass changed in quality, etc, etc. The result is that taking the 60 day wt of the lamb on several different days prevents NSIP from making a direct comparison of a lamb's performance with that of another lamb weighed on a different day. In this example, the weighing on 3 separate dates greatly reduces the ability of NSIP to separate environmental differences from genetic differences in the lambs and ewes.

**120 day postweaning wt** - This wt does not need to be taken at exactly 120 days of age. The key requirements are i) at least 30 days after the 60 day wt, ii) between 90 and 150 days of age. You do not have to & should not weigh each lamb on their 120<sup>th</sup> day of age. Weighing every lamb on exactly their 120<sup>th</sup> day of age, will result in data that is not very useful. As with the 60 day wt, try to select a weighing day that allows a large group of the lambs to fall in the same weighing window and be in the same "*contemporary group*". This maximizes the ability of NSIP (and you) to compare lamb performance and to try and tease out the difference in performance due to genetics and that due to the environment (difference in feed quality & quantity, heat, humidity and other stressors).

**Contemporary Group** - Definition. A contemporary group is a uniformly managed group of sheep of the same breed composition and similar age and sex.

The contemporary group is a key part of the NSIP evaluation of data and the generation of EPDs. If an animal is in the same contemporary group as another, differences in the adjusted 60 day wts and adjusted 120 days are assumed to be due to genetic differences since they and their dams are exposed to the same environment.

**Contemporary Group** - Common Sense Definition. A contemporary group is a group of sheep of the same age, breed and sex that are reared under the same management conditions which includes feeding procedures, medication, pen/pasture/location and time of year. In other words, sheep that have an equal opportunity to perform (i.e. express their genetic potential).

**Note about selecting weighing date, weighing practices, management groups, locations, etc** - The key concept to understand is contemporary group (see NSIP website for discussion of contemporary group). Tracking the contemporary groups and managing the contemporary groups so that you and NSIP have quality information to submit and to evaluate is critical. The more ewes/lambs you have in one contemporary group, the more animals that can be directly compared to determine genetic differences. A contemporary group is all the ewes/lambs that have the same environment. If a flock owner has ewes in two pens, then there are two contemporary groups. If you split your flock and feed the ewes based on the number of lambs, then each different feeding group is a different contemporary group. So, each flock owner needs to decide how to maintain and track their contemporary groups. Of minor importance is tracking those lambs and ewes that get sick or are stressed. For example, if a ewe gets mastitis or only has one functional side to their udder, this impacts lamb performance. It can be noted. See [www.nsip.org](http://www.nsip.org) for more information on contemporary groups. Also, note that if you bring your ewes and lambs in from pasture and pen them up and weigh half the lambs in the morning and half the lambs that evening or the next morning, the stress of the pen, the stress of the change in water or lack of water could cause several lambs on a hot day to lose a few pounds and they are actually in different contemporary groups for that weighing date.

1. Increasing the quality of Genetic Connections - Increasing the quality of genetic connections increases the ability of NSIP to determine genetic merit and factor out management and environmental differences. In order of importance, the best ways to the genetic connections between NSIP enrolled flocks are -
  - a. Using the same sire on several farms. This can be done by AI or by sharing the same ram (there are biosecurity issues and technical issues that make this hard for many flocks to use).
  - b. Using a ram out of an NSIP enrolled flock that has good data in the Katahdin NSIP database. If the service ram was in a good contemporary group with weight data.
  - c. Using a service sire with no weight data in NSIP, but is closely related (son, sire, sibling) to animals in NSIP enrolled flocks.
  - d. Genetically connecting to flocks by buying ewes from NSIP enrolled flocks. This is a start, but the connections are weak. Potentially, if you bought 40 ewes from different Katahdin NSIP flocks that were well connected, it would be a great start. But one shared ram would do much more for you.
  - e. Two-Four years of good data in the program will reward you with useful EPDs to use for your genetic selection.
  
2. *Submission of information* - There is a computer spreadsheet provided to the NSIP breeders. It is a Microsoft Excel Product. Having a computer with email access and a Microsoft product is the easiest. There seem to be fewer problems with the computers talking to each other if the breeder uses a PC rather than a Macintosh, but we have several breeders using Macintosh's. At this point, NSIP enrollees are responsible for entering their own data in the computer and sending to the Data Coordinator, Jim Morgan. We may work with breeders in the future to provide a service for breeders who don't have access to computers, but there will be an extra cost (probably \$10-\$20/hr). Most people raising sheep have access to a neighbor or a child or grandchild who can do the computer work for them or help them. We strongly recommend the latter. Note - we have been able to use Lotus and Quattro and Apple Works Spreadsheet programs to transfer data.
  
3. *Tagging and identifying and submitting animal IDs to NSIP.*
  - a. NSIP only accepts animal IDs with 8 characters and no dashes or spaces. So, it is best if you can use a system that has only 8 characters.

- b. The Canadian system of animal ID works well. Since, no spaces are needed and there is an alphabetical character used for each two digit year. e.g. 2000 is K, 2001 or 01 is L, 02 is M, 03 is N and 04 is P (since the letter O and 0 are too much alike).

4. Common Minor Errors - KHSI Registration numbers

- a. need 6 characters.
- b. Don't use the alphabetical letter O at the front. Those characters need to be the number zero or double zero - 0 or 00 for both Recorded and Registered Katahdins. e.g. 030293, 0X5695 (the number 0, not the letter O).

If you have any more questions, please feel free to contact Jim Morgan. More general information can be obtained at the NSIP website.

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[www.nsip.org](http://www.nsip.org)