

Guide to NSIP Data Submission

Andrew Weaver




NSIP
National Sheep
Improvement
PROGRAM



Thank you for your interest in submitting data to the National Sheep Improvement Program (NSIP). As the sheep industry strives to improve the quality of sheep in the U.S. and remain competitive with other livestock industries, accurate genetic evaluation will be critical to meeting these goals. With this technology, we can select the most appropriate breeding stock for improving the performance of our flocks.

Genetic Selection


- Performance = genotype + environment
- Standardize environment  Differences should be genetic
- Contemporary Groups
 - Your data is only as good as your contemporary groups
 - Animals managed together: same environment
 - Born at a similar time
 - Housed together
 - Same feeding program
 - Same health management

Same opportunity to perform



The observed performance of any livestock can be characterized as a combination of that individual's genetic material (genotype) and the environment which they are provided. By raising animals in a similar environment, they are given an equal opportunity to perform and any differences which are detected can be attributed to differences in their genetic makeup. A group of individuals which are maintained in a similar environment are referred to as a contemporary group. A contemporary group is a set of animals which are born in a similar time period, housed together with similar health management (vaccination, etc.) and provided the same access to feed.

Why collect data?

- You can't select for what you don't measure
- What to measure  What is economically relevant to your flock
 - Maternal
 - Number of lambs born/weaned
 - Growth data
 - Birth, weaning and post weaning weights
 - Carcass Data
 - Fat depth and loin muscle depth
 - Parasite Resistance
 - Fecal egg counts



The more traits which are measured in a flock, the more opportunity there is to observe areas which are in need of improvement as well as those which are satisfactory. Most importantly, traits which impact the economic basis of your operation should be closely monitored. By measuring these traits within a contemporary group at the same time, data can be generated which can be used for these genetic evaluation programs.

Data Collection

- When to measure:
 - Birth
 - Weight, number of lambs born/ewe
 - Weaning (42-90 days)
 - Weight
 - Number of lambs weaned/ewe
 - Fecal egg count
 - Post weaning (Early: 91-150 days, Late: 151-304 days)
 - Weight
 - Carcass measures
 - Fecal egg count



There are 3 important time points for data collection. These are at birth, at weaning and a post weaning time period as listed above. At birth, lamb weights should be measured as well as the number of lambs born in each litter. At weaning between 42 and 90 days of age, lambs weights should be recorded as well as the number of lambs weaned per litter. A fecal egg count can also be recorded at this time if lambs are provided access to pasture prior to weaning. Typically in eastern U.S. production systems, post weaning measurements are taken in the early post weaning time period. At this post weaning point, weights should be recorded as well as carcass measures (fat depth and eye muscle depth) and fecal egg counts.

Data Collection

- Carcass Data
 - Certified ultrasound technician
- Fecal Egg Count
 - Modified McMaster's Test
 - Strongylid egg count
 - Should be done by trained personnel
 - See contact info for more information on fecal egg counts



Our Mission:

To provide predictable, economically important genetic evaluation information to the American sheep industry by converting performance records into relevant decision-making tools.

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USA Scanning Info

If you are going to do scanning read the article about recording and reporting your scan data.
[Recording and reporting scanning data](#)

[Here is important information from Chris Schauer about the Scanner Certification Requirements.](#)
[This is a list of Ultrasound Scanners that have gone through the training to be U.S. Certified.](#)

[Ultrasound certified scanners 2016](#)



Carcass measures and fecals egg counts typically require the assistance of a third party however with the proper training, can be done yourself. Carcass measures (fat depth and eye muscle depth) should be taken by a certified ultrasound technician. These technicians can be found on the NSIP website (NSIP.org) under the member services tab. Technicians can be contacted for more information regarding their services.

Fecals egg counts are done using the Modified McMasters Test where only strongylid (Haemonchus, etc.) eggs are measured. There are numerous labs which can perform these counts. If you are interested in having fecal egg counts measured in your flock, please contact one of the individuals listed on the contacts page (slide 37) for more information.

NSIP Enrollment



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Enrollment Form ←

The enrollment forms with the price structure is here. [2017 Enrollment Form-Renewal](#) or [2017 Enrollment Form- Youth and First Year Free.](#)

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In addition to the enrollment fee there is a per head data fee for any animal 1 birth measurement in on if it has not been marked as a cull or commercial and enrollment form it refers to section 4.14 in the Quality Assurance Manual. In this need to put a CU or a CO in the tag number to indicate the culls and commi & CU belong in the 11 & 12 digit location. You should not mark more than 25% way, it is also where a lot of us US breeders are putting letters to indicate our fl not be used for anything besides this cull & commercial reason. This does mec have to do a retag with the CO or CU at the time that you enter a post-birth r already have sent partial data (i.e. birth info) in on them and do not want to l animal.



2017 Enrollment Form

Farm/Ranch Name: _____
Individual: _____
Address: _____
City, State, Zip: _____
Email: _____ Phone: _____

If previously enrolled in NSIP, what is your NSIP Flock ID(s)? _____

What kind of computer do you have? PC with Windows Mac

List breed(s) in your flock: _____



Before getting started with data submission, you will first need to enroll in the NSIP program. The enrollment forms are be located under the member services tab on the NSIP website (NSIP.org). Please follow directions listed here for enrollment and contact Rusty Burgett (NSIP Program Director) at info@nsip.org with any questions regarding becoming an NSIP member.

Data Organization (Excel recommended)

- Collect data with data submission in mind
- Collect data on all lambs in contemporary group at the same time

Sheep ID	Sire	Dam	Sex	Birth Date	BT	RT	Birth WT
7056	518	1636	E	3/24/2017	S	S	8.0
7058	1456	60183	E	3/25/2017	S	S	9.4
7060	1456	60193	E	3/26/2017	S	S	9.8
7062	518	555	E	3/26/2017	TW	TW	6.2
7065	1456	60182	E	3/27/2017	S	S	10.6
7075	518	224	E	3/29/2017	TW	TW	8.0
7076	518	224	E	3/29/2017	TW	TW	7.4
7081	518	P38	E	4/4/2017	S	S	11.4
7083	1456	60184	E	4/4/2017	S	S	7.2
7087	518	1609	E	4/8/2017	S	S	10.0
7089	518	60187	E	4/11/2017	S	S	11.0
7091	1456	60191	E	4/11/2017	S	S	9.8

BT: birth type
RT: rear type



Data can be easily organized in the Microsoft excel program. When collecting data, it is important to keep data submission in mind. Data should be collected within the specified time frames for each contemporary group. A given set of measurements (weaning for example) within a contemporary group should be recorded at the same time. A lamb's ID should be recorded as well as sire and dam. Date of birth, birth and rear type as well as weight measurements should be organized for each lamb.

Data Collection

- Collect data with data submission in mind
- Collect data on all lambs in contemporary group at the same time

Sheep ID	Sire	Dam	Sex	Birth Date	BT	RT	Birth WT	Weaning Date	Weaning WT	Post Weaning Date	Pweaning WT
7056	518	1636	E	3/24/2017	S	S	8.0	6/8/2017	55.4	8/15/2017	94
7058	1456	60183	E	3/25/2017	S	S	9.4	6/8/2017	55.5	8/15/2017	101.5
7060	1456	60193	E	3/26/2017	S	S	9.8	5/31/2017	32.9	8/15/2017	70.5
7062	518	555	E	3/26/2017	TW	TW	6.2	6/8/2017	34.8	8/15/2017	76
7065	1456	60182	E	3/27/2017	S	S	10.6	6/8/2017	66.9	8/15/2017	120.5
7075	518	224	E	3/29/2017	TW	TW	8.0	5/31/2017	44.9	8/15/2017	88.3
7076	518	224	E	3/29/2017	TW	TW	7.4	5/31/2017	46.4	8/15/2017	89.9
7081	518	P38	E	4/4/2017	S	S	11.4	6/8/2017	56.5	8/15/2017	97
7083	1456	60184	E	4/4/2017	S	S	7.2	6/27/2017	39.1	8/15/2017	71.3
7087	518	1609	E	4/8/2017	S	S	10.0	6/8/2017	53.3	8/15/2017	101
7089	518	60187	E	4/11/2017	S	S	11.0	6/27/2017	52.4	8/15/2017	89.5
7091	1456	60191	E	4/11/2017	S	S	9.8	6/8/2017	50.6	8/15/2017	90.5

Add in data for each lamb as it is collected



As the contemporary group gets older, additional measurements should be added as appropriate. These can be added to the same excel file in additional columns. Be sure to include the date these measurements are recorded. A reminder weight measurements submitted to NSIP should be in pounds!

Data Collection

- Collect data with data submission in mind
- Collect data on all lambs in contemporary group at the same time

Sheep ID	Sire	Dam	Sex	Birth Date	BT	RT	Birth WT	Weaning Date	Weaning WT	Post Weaning Date	Pweaning W	Fat	EMD
7056	518	1636	E	3/24/2017	S	S	8.0	6/8/2017	55.4	8/15/2017	94	5	38.82
7058	1456	60183	E	3/25/2017	S	S	9.4	6/8/2017	55.5	8/15/2017	101.5	6	39.13
7060	1456	60193	E	3/26/2017	S	S	9.8	5/31/2017	32.9	8/15/2017	70.5	3	32.07
7062	518	555	E	3/26/2017	TW	TW	6.2	6/8/2017	34.8	8/15/2017	76	3	34.76
7065	1456	60182	E	3/27/2017	S	S	10.6	6/8/2017	66.9	8/15/2017	120.5	5	42.71
7075	518	224	E	3/29/2017	TW	TW	8.0	5/31/2017	44.9	8/15/2017	88.3	5	45.35
7076	518	224	E	3/29/2017	TW	TW	7.4	5/31/2017	46.4	8/15/2017	89.9	3	36.25
7081	518	P38	E	4/4/2017	S	S	11.4	6/8/2017	56.5	8/15/2017	97	6	35.54
7083	1456	60184	E	4/4/2017	S	S	7.2	6/27/2017	39.1	8/15/2017	71.3	3	31.29
7087	518	1609	E	4/8/2017	S	S	10.0	6/8/2017	53.3	8/15/2017	101	7	33.43
7089	518	60187	E	4/11/2017	S	S	11.0	6/27/2017	52.4	8/15/2017	89.5	4	34.06
7091	1456	60191	E	4/11/2017	S	S	9.8	6/8/2017	50.6	8/15/2017	90.5	4	35.79

Fat: measurement of fat depth at 12th/13th rib in mm

EMD: measurement of loin muscle depth at 12th/13th rib in mm



Carcass measurements for each lamb can be added as well. They are recorded in mm.

Data Collection

- Collect data with data submission in mind
- Collect data on all lambs in contemporary group at the same time
- Blank cells need a *

Sheep ID	Sire	Dam	Sex	Birth Date	BT	RT	Birth WT	Weaning Date	Weaning WT	Post Weaning Date	Pweaning WT	Fat	EMD	wFEC Date	wFEC	pFEC Date	pFEC
7056	518	1636	E	3/24/2017	S	S	8.0	6/8/2017	55.4	8/15/2017	94	5	38.82	6/13/2017	1650	8/15/2017	0
7058	1456	60183	E	3/25/2017	S	S	9.4	6/8/2017	55.5	8/15/2017	101.5	6	39.13	6/13/2017	50	8/15/2017	100
7060	1456	60193	E	3/26/2017	S	S	9.8	5/31/2017	32.9	8/15/2017	70.5	3	32.07	6/13/2017	0		
7062	518	555	E	3/26/2017	TW	TW	6.2	6/8/2017	34.8	8/15/2017	76	3	34.76	6/13/2017	3600	8/15/2017	300
7065	1456	60182	E	3/27/2017	S	S	10.6	6/8/2017	66.9	8/15/2017	120.5	5	42.71	6/13/2017	150	8/15/2017	300
7075	518	224	E	3/29/2017	TW	TW	8.0	5/31/2017	44.9	8/15/2017	88.3	5	45.35	6/13/2017	0		
7076	518	224	E	3/29/2017	TW	TW	7.4	5/31/2017	46.4	8/15/2017	89.9	3	36.25	6/13/2017	0	8/15/2017	50
7081	518	P38	E	4/4/2017	S	S	11.4	6/8/2017	56.5	8/15/2017	97	6	35.54	6/13/2017	1200	8/15/2017	50
7083	1456	60184	E	4/4/2017	S	S	7.2	6/27/2017	39.1	8/15/2017	71.3	3	31.29			8/15/2017	500
7087	518	1609	E	4/8/2017	S	S	10.0	6/8/2017	53.3	8/15/2017	101	7	33.43	6/13/2017	550	8/15/2017	450
7089	518	60187	E	4/11/2017	S	S	11.0	6/27/2017	52.4	8/15/2017	89.5	4	34.06			8/15/2017	3100
7091	1456	60191	E	4/11/2017	S	S	9.8	6/8/2017	50.6	8/15/2017	90.5	4	35.79	6/13/2017	400	8/15/2017	50

Fecal egg count data (eggs/g)
wFEC: weaning fecal egg count
pFEC: post weaning fecal egg count



Fecal egg count data can be added at both the weaning and post weaning time points with the respective dates these measurements were taken. Be sure to include a * in any blank cell prior to uploading the file to the Pedigree Master program. The upload will not be processed correctly if blank cells are present.

Data Formatting

- Column headings are specific
 - Listed on page 21 of PedigreeMaster manual



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PedigreeMaster

Using the PedigreeMaster Data Entry System

[Pedigree Master Manual 2.0 January 2017](#)



Click on
PedigreeMaster

Our Mission:



Only specific column headings are recognized by the Pedigree Master program. These headings can be found in the Pedigree Master manual on the NSIP website. Commonly used headings can be found on slides 13 and 14. It is important when formatting files for upload to be sure all headings are correct and appropriate for the data represented.

Data Formatting

- NSIP Identification Numbers (16-digit)



NSIP uses a 16-digit identification number to represent all sheep in the program. You will need to create one of these numbers for each lamb you submit data for in the program. The first 2 digits represent the breed type of the sheep. Listed are the codes for the respective breeds. Texel and Suffolk sheep are considered terminal sires. The Katahdin would be a hair breed for example. The following 4 digits are the specific flock identification number. This will be given to you when you enroll in the NSIP program. The next 4 digits represent the year the lamb was born in. The remaining 6 digits can be used for that specific individual's ID number. Typically, these ID numbers correspond to the lambs ear tag for ease of management. These 16-digit numbers are created by you for each lamb or ram/ewe submitted. If you are using sires or have purchased ewes which have already been enrolled in NSIP, they will already have a 16 digit identification number. You can contact the breeder or use the NSIP searchable database (nsip.org/searchable-database/) to find these numbers.

Data Formatting

- Birth and Weaning Data (headings are specific)

ID	SIRE	DAM	DOB	Sex	BWT	BT	RT	Status	WDDMM	WWT	WFEC	WGRP
6970092017007056	6970012015000518	6970092016001636	032417	2	8.0	1	1	Current	060817	55.4	1650	2
6970092017007058	6970092014001456	6970092016060183	032517	2	9.4	1	1	Current	060817	55.5	50	2
6970092017007060	6970092014001456	6970092016060193	032617	2	9.8	1	1	Current	060817	35.7	0	2
6970092017007062	6970012015000518	6970012015000555	032617	2	6.2	2	2	Current	060817	34.8	3600	2
6970092017007065	6970092014001456	6970092016060182	032717	2	10.6	1	1	Current	060817	66.9	150	2
6970092017007075	6970012015000518	6970092015000224	032917	2	8.0	2	2	Current	060817	49.6	0	2
6970092017007076	6970012015000518	6970092015000224	032917	2	7.4	2	2	Current	060817	51.4	0	2
6970092017007081	6970012015000518	6970092016000P38	040417	2	11.4	1	1	Current	060817	56.5	1200	2
6970092017007083	6970092014001456	6970092016060184	040417	2	7.2	1	1	Current	060817	31.9	*	2
6970092017007087	6970012015000518	6970092016001609	040817	2	10.0	1	1	Current	060817	53.3	550	2
6970092017007089	6970012015000518	6970092016060187	041117	2	11.0	1	1	Current	060817	42.2	*	2
6970092017007091	6970092014001456	6970092016060191	041117	2	9.8	1	1	Current	060817	50.6	400	2

Data can be submitted to NSIP as it is collected. For subsequent submissions, only individual ID is needed (no pedigree data necessary). Submit pedigree information with weaning data, submit post weaning data later.

A reminder that headings are specific in the Pedigree Master program. Once data has been collected, that data must be formatted to be compatible with the software. Headings should be adjusted to match those headings listed in the Pedigree Master manual or here. The 16 digit identification numbers should be inserted for all lambs as well as for their sires and dams. Date of birth as well as dates for weaning and post weaning measurements should be formatted as shown above with DD/MM/YR. Status should be listed as current. Status can be adjusted based on death or sales. More information on this can be found in the manual. In general, leave the status as current. Weights should be listed in pounds. All empty cells need a *. Contemporary groups should be listed as appropriate starting at 1. Lambs with the same number are considered to be in the same contemporary group. If you have an early born and late born set of lambs for example, you may submit data on 2 contemporary groups since these 2 groups were born a different time periods. Once the pedigree information has been submitted for a lamb, only the ID number is needed for subsequent submissions. For ease of data submission, pedigree information can be submitted with birth and weaning data. Post weaning data can be submitted later and only the lamb ID needs to be included with that data.

Data Formatting

- Post Weaning Data (EP prefix denotes early post weaning time frame)

ID	EPDDMM	EPGRP	EPWT	PEMD	EPCF	EPFEC
6970092017007056	081517	2	94	38.82	5	0
6970092017007058	081517	2	101.5	39.13	6	100
6970092017007060	081517	2	70.5	32.07	3	*
6970092017007062	081517	2	76	34.76	3	300
6970092017007065	081517	2	120.5	42.71	5	300
6970092017007075	081517	2	88.3	45.35	5	*
6970092017007076	081517	2	89.9	36.25	3	50
6970092017007081	081517	2	97	35.54	6	50
6970092017007083	081517	2	71.3	31.29	3	500
6970092017007087	081517	2	101	33.43	7	450
6970092017007089	081517	2	89.5	34.06	4	3100
6970092017007091	081517	2	90.5	35.79	4	50

Here is an example of post weaning data formatting. The EP is used to designate the early post weaning time period. This means measurements were taken when the lamb was 91 to 150 days of age. If the lambs is over 150 days at post weaning measurement, only a P is need as a prefix.

Data Formatting

- Copy and paste Excel into Notepad → default saves as .txt

Untitled - Notepad

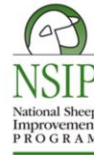
File Edit Format View Help

ID	SIRE	DAM	DOB	Sex	BHT	BT	RT	Status	MOVM	MT	WFEC	WGRP	EPDOMM	EPGRP	EPMT	EPEND	EPCF	E
6970092017007010	6970012015000518	6970092014001050	012217	1	11.4	1	1	1	Current	041017	70.5	*	*	*	*	*	*	1
6970092017007032	6970012015000518	6970092014001044	021117	1	9.8	2	2	2	Current	*	*	*	*	*	*	*	*	1
6970092017007033	6970012015000518	6970092014001044	021117	1	10.4	2	2	2	Current	*	*	*	*	*	*	*	*	1
6970092017007042	6970012015000518	6970092015001294	022717	1	11.0	1	1	1	Current	041017	47.4	*	*	*	*	*	*	1
6970092017007043	6970012015000536	6970092011001105	022717	1	12.6	1	1	1	Current	*	*	*	*	*	*	*	*	1
6970092017007061	6970012015000518	6970012015000555	032617	1	4.6	2	2	2	Current	060817	48.5	2500	*	*	*	*	*	2
6970092017007071	6970092014001456	6970092016060185	032917	1	5.2	1	1	1	Current	060817	42.7	950	*	*	*	*	*	2
6970092017007072	6970012015000518	6970092011001179	032917	1	10.2	2	2	2	Current	060817	57.6	1650	*	*	*	*	*	2
6970092017007074	6970012015000518	6970092011001179	032917	1	6.2	2	2	2	Current	060817	56.0	1150	*	*	*	*	*	2
6970092017007080	6970012015000518	6970092016000503	040117	1	9.8	1	1	1	Current	060817	59.4	700	*	*	*	*	*	2
6970092017007088	6970092014001456	6970092016060186	040817	1	10.0	1	1	1	Current	060817	55.0	250	*	*	*	*	*	2
6970092017007020	6970012015000518	6970092015000001	012417	2	9.2	1	1	1	Current	041017	59.0	*	*	*	*	*	*	1
6970092017007022	6970012015000518	6970092011011207	012417	2	10.8	1	1	1	Current	*	*	*	*	*	*	*	*	1
6970092017007023	6970012015000518	6970092011001107	020617	2	8.0	2	2	2	Current	*	*	*	*	*	*	*	*	1
6970092017007041	6970012015000518	6970092011001185	022717	2	8.2	2	2	2	Current	*	*	*	*	*	*	*	*	1
6970092017007056	6970012015000518	6970092016001636	032417	2	8.0	1	1	1	Current	060817	55.5	1650	*	*	*	*	*	2
6970092017007058	6970092014001456	6970092016060183	032517	2	9.4	1	1	1	Current	060817	55.4	50	*	*	*	*	*	2
6970092017007060	6970092014001456	6970092016060193	032617	2	9.8	1	1	1	Current	060817	35.7	0	*	*	*	*	*	2
6970092017007062	6970012015000518	6970012015000555	032617	2	6.2	2	2	2	Current	060817	34.8	3600	*	*	*	*	*	2
6970092017007065	6970092014001456	6970092016060182	032717	2	10.6	1	1	1	Current	060817	66.9	150	*	*	*	*	*	2
6970092017007075	6970012015000518	6970092015000224	032917	2	8.0	2	2	2	Current	060817	49.6	0	*	*	*	*	*	2
6970092017007076	6970012015000518	6970092015000224	032917	2	7.4	2	2	2	Current	060817	51.4	0	*	*	*	*	*	2
6970092017007081	6970012015000518	6970092016000938	040417	2	11.4	1	1	1	Current	060817	56.5	1200	*	*	*	*	*	2
6970092017007083	6970092014001456	6970092016060184	040417	2	7.2	1	1	1	Current	060817	31.9	*	*	*	*	*	*	2
6970092017007087	6970012015000518	6970092016001609	040817	2	10.0	1	1	1	Current	060817	53.3	550	*	*	*	*	*	2
6970092017007089	6970012015000518	6970092016060187	041117	2	11.0	1	1	1	Current	060817	42.2	*	*	*	*	*	*	2
6970092017007091	6970092014001456	6970092016060191	041117	2	9.8	1	1	1	Current	060817	50.6	400	*	*	*	*	*	2

Once the data is formatted properly in excel, the entire page can be copied and pasted into a Notepad document. The columns will not line up with the respective data, this is okay. Save the file. This file will save as a .txt file which is compatible with Pedigree Master.

Pedigree Master

- Download PedigreeMaster from NSIP.org



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PedigreeMaster

Using the PedigreeMaster Data Entry System

Pedigree Master Manual 2.0 January 2017

The manual is also broken out by chapter here:

- Chapter 1 - Getting started
- Chapter 2 - Downloading, installing and Customizing**
- Chapter 3 - Data Entry
- Chapter 4 - Submitting data
- Chapter 5 - Retrieving Data

Our Mission:

To provide predictable, economically important

sheep industry by converting performance records into relevant decision-making tools.

Chapter 2 -- Downloading, Installing and Customizing

Machine Usage

PedigreeMaster (PM) software may be used in either 32- or 64-bit PC machines. Ways are being researched to make PM easier to use on Apple computers. Currently, Apple users must have software such as BootCamp, VirtualMachine or another type of program that is capable of running PC programs. A program called Parallels has been used successfully by recent users. Appendix B gives additional information on using PM with a Mac.

Downloading and Installing

The latest PM software can be downloaded at:

<http://kidplan.mla.com.au/pedigreemaster/index.htm>

This site should be checked several times each year for updated versions. Each new version is more efficient, and resolves problems encountered in previous versions. A good reminder is to update and install them before adding any new data or installing EBVs that you have received from Australia. Before downloading any software update, it is a good idea to backup your existing data (see page 16). After downloading and installing the software update, it is a good idea to reboot the computer, just as it is with any new software update. Rebooting should help assure that the update will be seamless when working with new data.

Download

Added a fix/patch to making database auto build, auto sync & consolidate preferences.

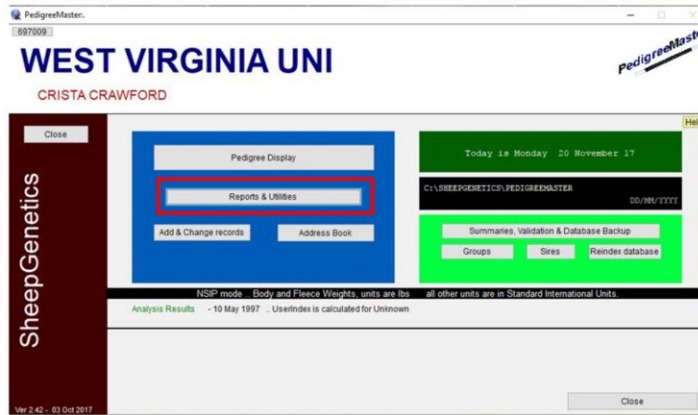
Download PedigreeMaster	Version 2.41 - 29 Aug 2017
Download PedigreeMaster	Program now installs any missing data entry files on start-up.
Download PedigreeMaster	Version 2.40 - 22 Aug 2017
Download PedigreeMaster	Minor changes to "Database Disabled" to remove any duplicates.
Download PedigreeMaster	Version 2.39 - 18 Aug 2017
NSIP Change Logsheet	Updated NSIP report for 2017 2.0.0

PedigreeMaster

Please - always create a backup before installing new or updated version of PedigreeMaster

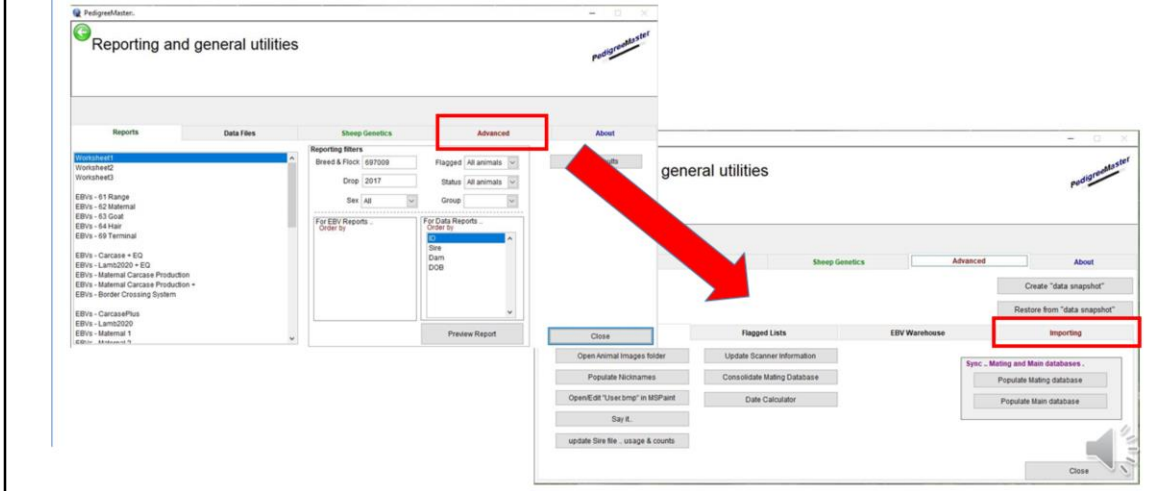
Pedigree Master can be downloaded from the NSIP website. Under member services, select Pedigree Master and then click on Chapter 2-downloading, installing and customizing. From here click on the link in the red box shown above. This will direct you to another page where you can download the latest version of Pedigree Master.

Data Uploading



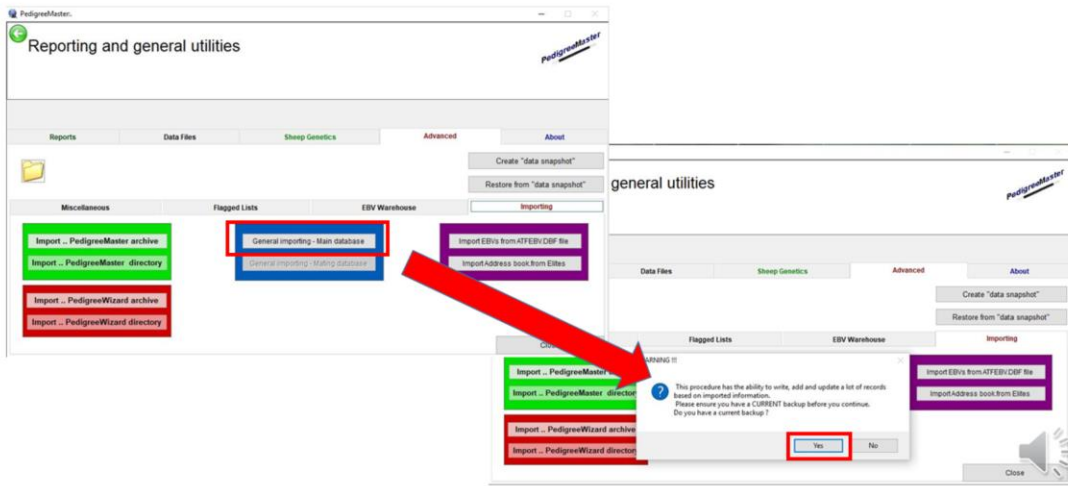
Once downloaded, the homepage will appear as above with your farm name as well as your own. To begin data upload, click on Reports and Utilities.

Data Uploading



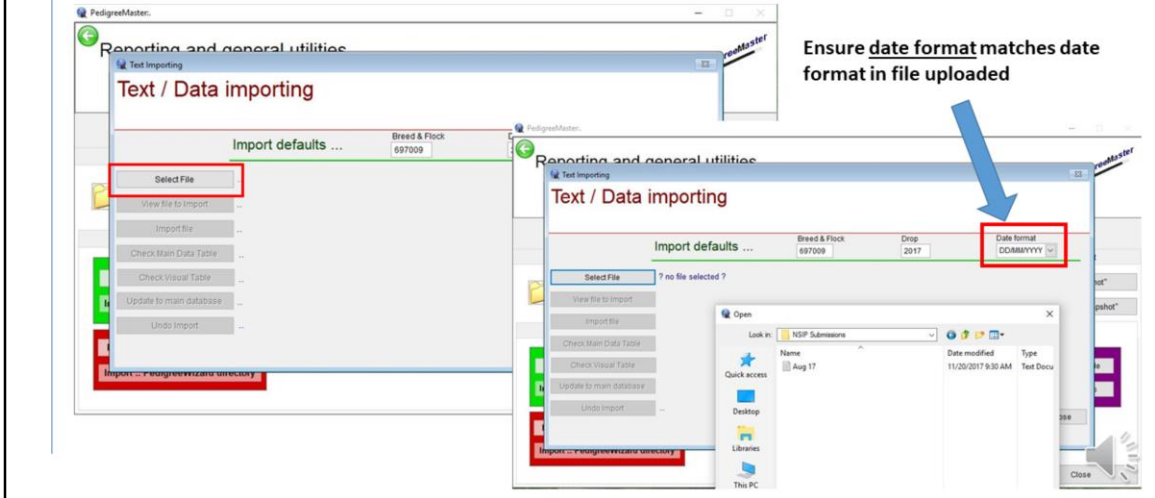
The above page will appear. Click on Advanced and then the Importing tab under the advanced window.

Data Uploading



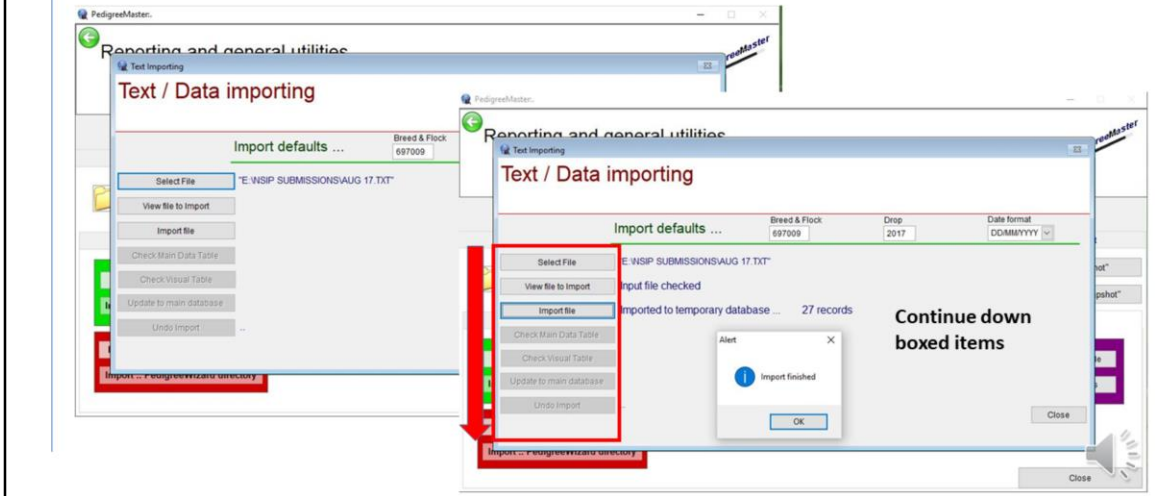
From here, click on the General importing-Main database bar. A popup window will appear regarding a current backup of the data. Click Yes. Your data should be saved in the excel file as well as the .txt file if needed in the future.

Data Uploading



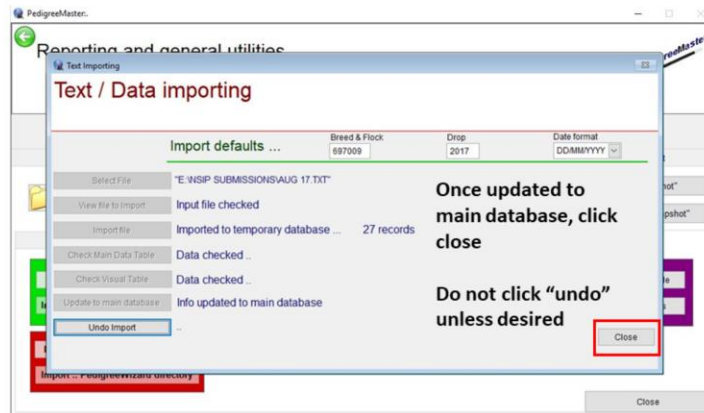
A Text/Data importing window will appear. Click the Select File bar and select the .txt file you saved. Additionally, be sure the date format (red box) listed matches the date format you used in the data formatting steps.

Data Uploading



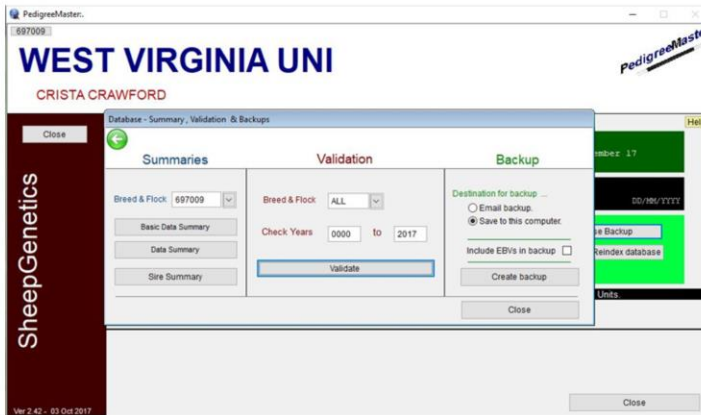
Continue down selecting the each bar ensuring data is correctly uploaded. In general, Pedigree Master will not upload data if it is not formatted properly. Select OK for import finished.

Data Uploading



Once the Update to main database has been completed, select Close. Do not select Undo Import unless you desire to do so.

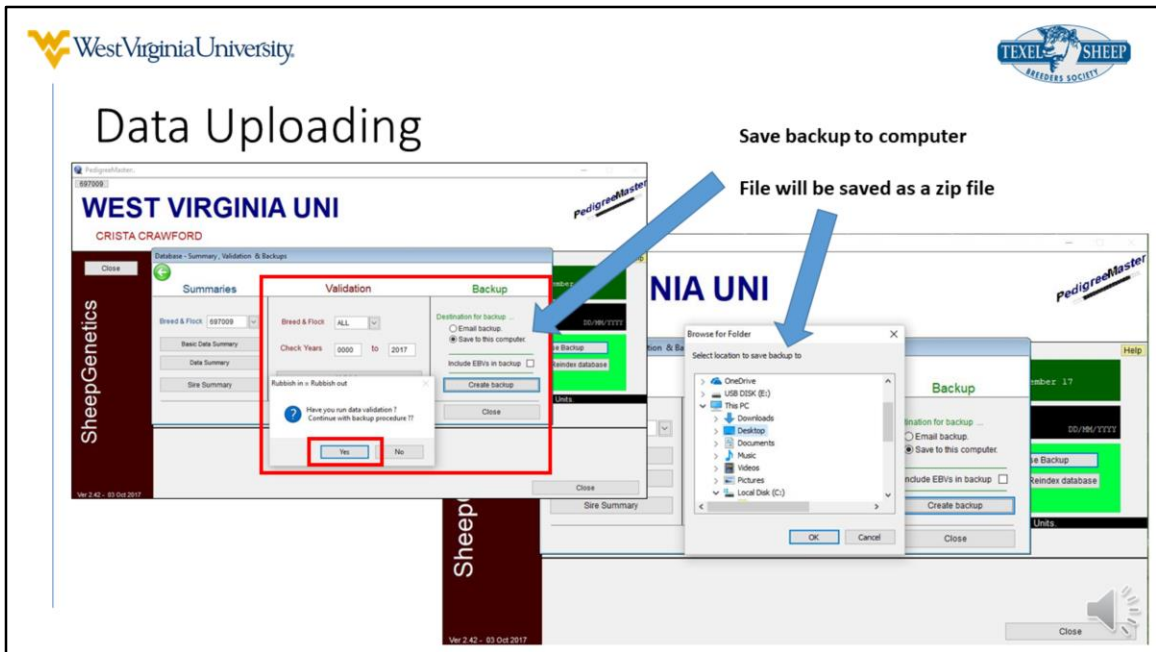
Data Uploading



- Validate uploaded data
- Ensure all uploaded data was entered correctly
- Fix any mistakes

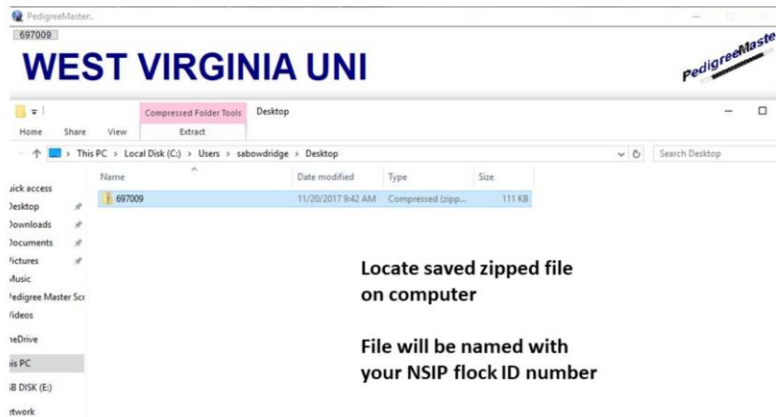
Once the main database has been updated, return to the main screen. The next step is to validate the data upload. Click on the Summaries, Validation and Database Backup bar located on the main screen. A popup window will appear. Select the Validate bar. The program will then validate the uploaded data. Pedigree Master will not upload any data which was entered incorrectly. Any mistakes detected can be corrected and the upload process repeated.

Data Uploading



After validation of the data, the next step is to create a backup of the data. Under the Backup tab select the circle next to Save to this computer; then select Create Backup. A popup box will appear verifying you have completed the validation step and asking to continue, select Yes. Another popup window will appear where you can select a location to save the file. Save somewhere which is easily accessible. The file will be saved as a zip file.

Data Uploading



Locate saved zipped file on computer

File will be named with your NSIP flock ID number



Once the file has been saved, locate the file on the computer. The file should be labeled with the breed code (69: terminal sires) followed by your 4 digit NSIP number.

Data Submission

- Zip file saved from Pedigree Master
- Email to Sheep Genetics (Australia)
 - database@sheepgenetics.org.au
- Data Run Calendar
 - Generally 2 runs per month



BECOME A MEMBER FIND STOCK WITH EBVS MEMBER SERVICES EVENTS RESOURCES ABOUT

Data Run Calendar

Our Mission:

To provide predictable, economically important genetic evolution information to the American sheep industry by converting performance records into relevant decision-making tools.

Show Type **All** **Member** **Public Entry Calendar** **Event Calendar**

◀ Nov 2017 ▶ Today

November 2017

Sun	Mon	Tue	Wed	Thu	Fri	Sat
		Only 10:00 AM Eastern				

Only 10:00 AM Eastern

Only 10:00 AM Eastern

This file can then be emailed to Sheep Genetics at the email listed above. NSIP works with Sheep Genetics (Australia) to run all of the genetic evaluations for the U.S. sheep industry. Data is process by their computer systems and then returned to U.S. producers. NSIP coordinates this process and manages the expenses associated with U.S. sheep producers participating in the program. Once new sheep have been entered in the program, NSIP will bill you a one time per head fee (\$3.00/hd). Additional data can be submitted on these sheep throughout their lifespan without any additional charges. In general, Sheep Genetics has data runs twice per month. The data run calendar can be viewed on the NSIP website under the member services tab. Data needs to be submitted prior to 5 pm on the designated days.

Data Results

- Results will be emailed to you from Sheep Genetics
- Generally results received within a week of data run

SheepGenetics

Analysis: USA TERMINAL , 1 September 2017

Sires Animal ID	Inbreeding	Prog:Fkls	Bwt	Wwt	Pwvt	Pfat	Pemd	NLB	NLW	Psc	Mwwt	Lamb2020	Carcass+	Sire
			kg	kg	kg	mm	mm	%	%	cm	kg		Dam	
697001-2015-000518		19:1	0.29	1.7	1.8	0.0	-0.2	-6	-2		0.1	99.7	107.4	697001-2003-BTP014
PORTLAND PRAIRIE TEXELS		Acc:	72	74	77	74	79				44	61	75	697001-2013-000339
697001-2015-000536		33:2	0.62	3.4	5.4	-1.7	-0.9	-2	-2		-0.1	102.8	123.0	697001-2005-BTL507
PORTLAND PRAIRIE TEXELS		Acc:	76	76	79	76	81				39	50	77	697001-2014-000396
697009-2014-001456		7:1	-0.13	-0.8	-1.1	-0.2	0.5					101.0	100.3	*
WEST VIRGINIA UNI		Acc:	37	49	53	48	55					49	50	*



You will receive list of sires and dams along with male and female progeny

SHEEP GENETICS



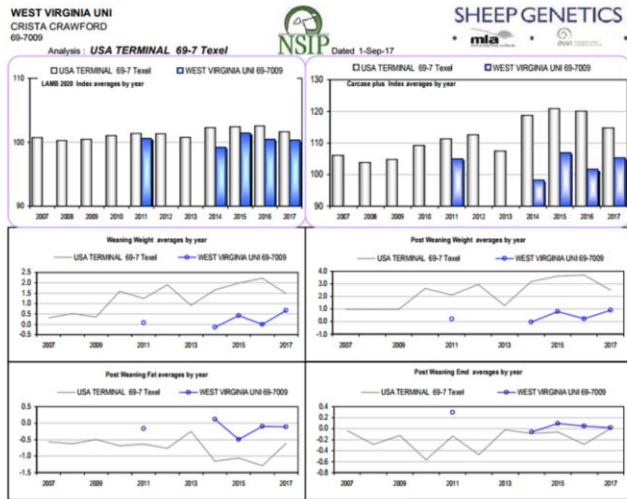
Data is usually received within a week after the data run. The results will be emailed to you from Sheep Genetics. There will be a number of files included with the data return. First you will find a list of individuals and their respective EBVs. Above each section is listed the category of animals. There will be a list of sires, dams as well as progeny. Below the individual's number, the breeder will be listed. Here if outside rams are utilized which are already enrolled in NSIP, their breeder will be listed. Prog:Fkls represents the number of progeny that ram or ewe has had and how many flocks those progeny are in. Next, the EBVs for the respective traits are listed along with their index values (carcass plus most commonly utilized for terminal sires in the U.S.). On the far right, the sire and dam of that individual will be listed.

Data Results

Index comparisons between breed average (white) and flock (blue)

Weight comparisons (WWT and PWWT EBV) between breed average (grey) and flock (blue)

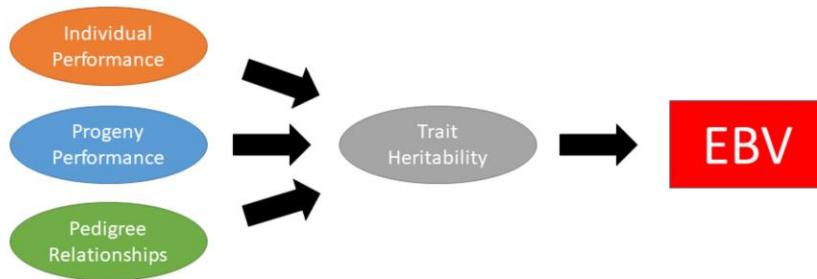
Fat and muscle comparisons between breed average (grey) and flock (blue)



In another file, flock and breed averages will be provided. The top charts represent the index averages between the flock in blue and the breed average in white. In these examples, the relatively new WVU Texel flock was utilized so flock averages don't exist for all years. The graphs below represent flock and breed averages for weight and carcass traits individually. These graphs can be used as an indicator of genetic progress over time.

Interpreting Results

- Estimated Breeding Values (EBVs)
 - $EBV = 2 * \text{Expected Progeny Difference (EPD)}$
- Estimation of the genetic merit of an individual



Results generated from Sheep Genetics are provided in the form of EBVs. For those familiar with the cattle industry, breeding values are provided as EPDs for cattle. An EBV is twice that of an EPD. The EBV represents that individual's genetic merit as opposed to an EPD which represents the genetic merit of that individual's progeny. An EBV is generated based on the performance of the individual, the individual's progeny as well as other relatives. Heritability is the proportion of phenotypic variation which is a result of genetics. From this information and the heritability of the respective trait, the breeding value can be determined.

Interpreting Results



ID Flock	Prg:Fiks Inbrd.Coef	BWt kg	WWt kg	MWW kg	PWWt kg	PFat mm	PEMD mm	NLW %	NLB %
696022-2015-00V039 <i>Virginia Tech-Dorset</i>	2 : 1 0%	0.73 70%	3.98 70%	0.96 52.0	7.38 72%	-4.33 70%	0.13 75%	3.2 44%	-0.1 39%
696022-2015-00V041 <i>Virginia Tech-Dorset</i>	44 : 1 0%	0.81 83%	2.54 82%	0.95 52.0	3.27 80%	-3.97 74%	0.63 76%	3.2 44%	-0.1 39%

Difference in PWWt EBV between V039 and V041: **4.11 kg**

Progeny inherit ½ of the genetic information from each parent

$4.11 / 2 = 2.05 \text{ kg}$ → Progeny from ram V039 will be 2.05 kg heavier at 120 days of age
 $2.05 \text{ kg} * 2.2 \text{ lbs/kg} = 4.5 \text{ lbs}$

★ Since EBV is provided in kg, difference in EBV equivalent to EPD difference in lbs

This example illustrates how to analyze the EBVs provided and compare individuals in terms of their genetic merit. Here, we use post weaning weight as an example. Ram V039 has a post weaning weight EBV of 7.38 kg compared to ram V041 which has a post weaning weight EBV of 3.27 kg. Weight EBVs are returned in kg, not pounds. Taking the difference, V039 has a 4.11 kg greater genetic merit for post weaning weight than ram V041. Since only half of an individual’s genetic merit is passed to its progeny, this number can be divided by 2 to get the EPD. In this case, the EPD is 2.05 kg. From this, in a theoretical mating, we would expect progeny from V039 to weigh 2.05 kg more than progeny of V041 at 120 days of age. Since there are 2.2 pounds in a kg, this difference is equivalent to 4.5 pounds. If lambs are worth \$1.50/pound, this added weight is worth an additional 6.75 dollars per head. Since the EBVs provided are given in kg and an EPD is half an EBV, the numerical difference between the EBVs in kg is roughly the same as the numerical difference in EPDs in pounds.

Interpreting Results

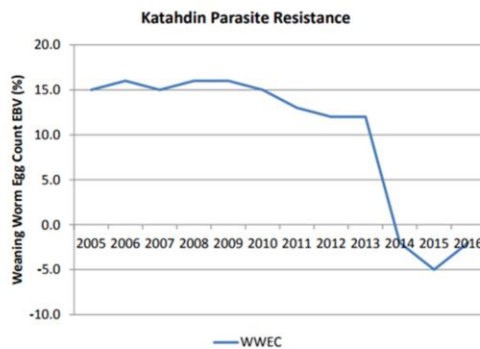
- Indexes
 - An economically weighted selection tool combining traits for a given purpose
 - Carcass Plus
 - Growth, muscle and fat traits are weighted based on market value
 - USA Hair
 - Number of lambs weaned, maternal weaning weight and lamb weaning weight
 - Maternal Wool
 - Number of lambs born and weaned, maternal weaning weight and lamb weaning weight
- Easy selection tool to make genetic progress in multiple traits on an economic basis (choose index for your production system/market)



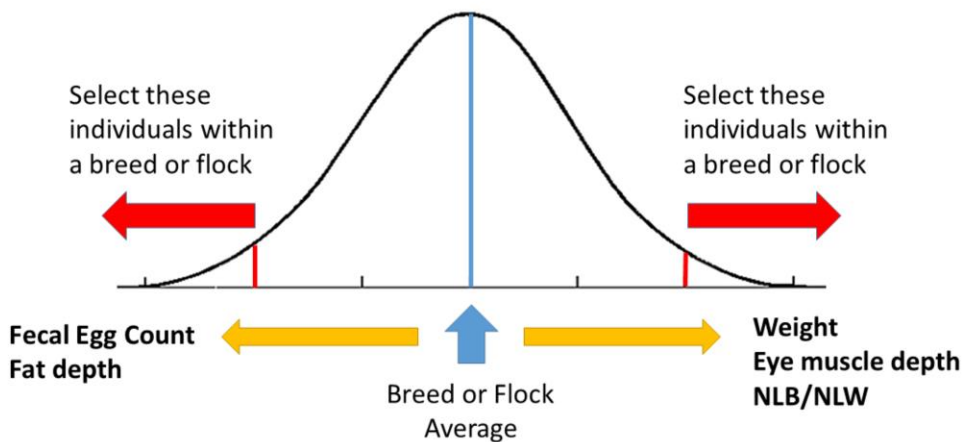
Indexes provide a simplified way of selecting elite individuals for a given purpose. For the different breed groups, there is an index comprising the most important traits for those breeds. This indexes weight the different traits on an economic basis. Each trait is incorporated at a different proportion accounting for differences in the value of those traits. Using the carcass plus index as an example, weight traits, eye muscle depth and fat depth are combined into one value. The greater the weight and muscle characteristics and the lesser the fat value, the greater the index value. Pertaining to index values, the greater the index, the better. If you desire to select for all of these traits at the same time, an index value is the best way to select for each trait at the appropriate level.

Use it!

- Breeding values are just numbers if not used
- Significant genetic progress to be made



There is a substantial amount of information provided using this genetic evaluation program. However, EBVs are only numbers if they are not put to use. These breeding values have been generated using advanced statistical methods and are proven to work. By intentionally selecting for those traits needing improvement, progress can be made. The greater the heritability and the more intense the selection, the faster the progress. In this example, the weaning fecal egg count EBV is shown for the Katahdin breed over the last 10 years. Up until around 2013, very little fecal egg count data was being submitted and selection was not a top priority. Once intense selection began for fecal egg count by Katahdin producers, rapid progress has been made in the last 3 years. Fecal egg count is moderately heritable. Submit data, analyze resulting EBVs, and put them to work for your flock.



Any trait within a population can generally be illustrated with a bell curve where most of the population is around the average with just a few individuals at extremely high or extremely low values. Based on the trait, we want to select our breeding stock from these extreme tails to make the most genetic progress. Traits such as weight gain or eye muscle depth we want to increase. The greater the weaning and post weaning weight EBVs and the greater the EMD EBVs the better. Individuals in the right hand tail of the bell curve for these traits should be selected. Contrary, traits such as fecal egg count or fat depth we want to decrease so individuals on the left tail of the bell curve should be selected. Using this information, selection priorities within your flock should be determined and breeding stock chosen based on these priorities. Using the percentile report for each respective breed (<http://nsip.org/usa-terminal-reports/>) the location of a sheep with respect to the rest of the breed based on its genetic merit can be determined. The lower the percentile (less than 10% or less than 5%) the more elite that individual is within the breed. The 50th percentile is average.

Summary

- **Headings**
 - Headings are specific; see Pedigree Master handbook or slides 13-14
- **Use appropriate time designations (slides 11, 13-14)**
 - Weaning (W; 42-90 days)
 - Early post weaning (EP; 91-150 days), Late post weaning (P; 151-304 days)
- **Formatting**
 - Use * in blank cells; no empty cells in upload file
 - Ensure date format matches formatting settings in Pedigree Master
- **Copy and paste excel file with data into notepad and save as .txt file**



This is a general summary of the important points to data submission. Prior to submitting, ensure all of these points have been considered. Additional information can be found on the provided slides.

Final Tips

- You can't select for what you don't measure
 - Keep records!
- Collect and organize data with NSIP submission in mind
 - Maintain good contemporary groups
- Submit data on ALL lambs
 - Only submitting performance data on elite lambs makes elite average
- Continue to submit data
 - EBVs will be low at first until accuracies increase with more data in system

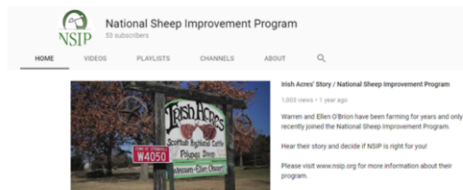


NSIP is a great tool and asset for U.S. sheep producers. While data submission may appear complicated, it can be done by anyone with access to a computer. The genetic information generated from these evaluations are a valuable resource for making breeding decisions and improving the entire sheep industry. As a reminder, you can't select for what you don't measure. It is only by recording keeping and analysis that we can identify those areas needing improvement and make accurate decisions to correct the issues. Submission of these records to NSIP can be simplified by organizing data with submission in mind. This will make the formatting steps that much easier. Additionally, it is important to submit data on all individuals, not just those sheep you think are the highest performing. Since breeding values are based on how an animal performs compared to the average of its contemporaries, only submitting data on elite individuals will make those elite animals appear to be average. By submitting data on all lambs, individuals will be evaluated fairly for their genetic merit. The accuracy of the breeding value is also a component of the breeding value. As accuracies increase, the breeding value will tend to magnify. When data is first submitted on a flock, very little is known about the true breeding values since very little data is present. As more data is accumulated, accuracies will increase which will improve the breeding values. If you are new to submitting data, be patient and continue to submit data. It may take several years before enough data is

accumulated where you start making significant progress.

Helpful Links

- NSIP Data Submission Videos
 - <https://www.youtube.com/watch?v=Oj08O00KZ-E&list=PL9FnQs2DMCwIH5Vue-4LhQ8WVvk6wWTUsr>
- NSIP YouTube Channel
 - <https://www.youtube.com/channel/UCxHKLizZE5INIImxPkSpwCw>
- NSIP.org
- WVU Small Ruminant Program



Here are a few links that may be useful to your understanding of data submission and genetic evaluations in general. The NSIP youtube channel offers numerous videos which further explain the submission process and utilization of Pedigree Master.

Contact Information

- Andrew Weaver (PhD student Bowdrige Lab, WVU)
 - arw0036@mix.wvu.edu
- Scott Bowdrige (Associate Professor, WVU)
 - scott.bowdrige@mail.wvu.edu
- Rusty Burgett (NSIP Program Director)
 - info@nsip.org



Any questions about this process can be directed to the following individuals. In addition, please contact us if you are interested in obtaining fecal egg count data on your flock.