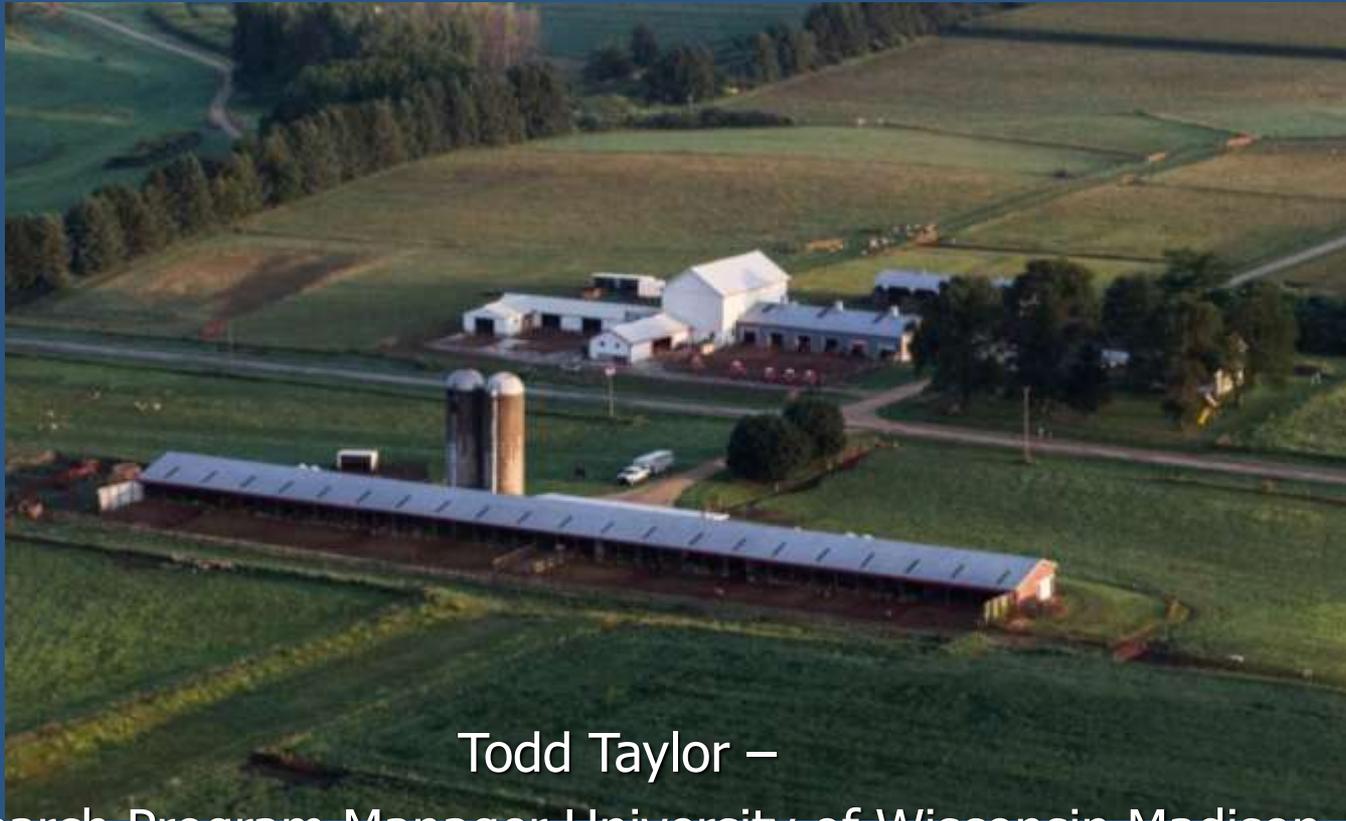


# Reproductive Technologies to for Genetic Improvement



Todd Taylor –  
Research Program Manager University of Wisconsin Madison,  
Arlington Ag Research Station

# Flock Composition

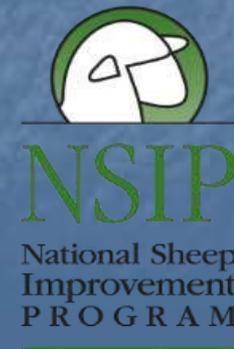


- 125 Polypay ewes
- 42 Hampshire ewes
- 15 Targhee Ewes

All Purebred and Registered within their breed associations!



All Enrolled in National Sheep Improvement Program!



# Repro Technologies Used

- Laparoscopic Artificial Insemination - AI
- Conventional Embryo Transfer - ET
- Laparoscopic OVUM Pick-up - LOPU
- In Vitro Fertilization - IVF



# Artificial Insemination

- Since 2021
- Mostly Hampshire
- Bring in new genetics outside of NSIP
- Primary trying to add Muscle



# Artificial Insemination

	ewes AI	bred		Lambs boi
Polypay	6	4	67%	7
Hamp 2022	8	5	63%	7
Hamp 2023 *	14	2	14%	2
Hamp 2023Fall :	12	3	25%	6
Hamp 2024	8	3	38%	8
Hamp 2025	10	7	70%	9
Hamp 2026	17	9	53%	13
	75	33	44%	52
Replacement ewes				14
Studrams used				3
Rams sold				3

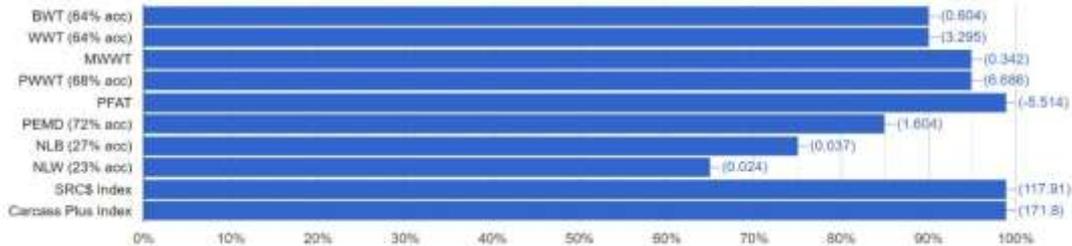


## Cost

AI procedure	\$ 70.00
Programing	\$ 20.00
Semen	\$100.00
Average Cost	\$190.00
Average Per Lamb Born	\$274.04

# U of WI 24026

## Trait Chart



NSIP Search Reports

6930032024024026



## Trait Details

Birth Weight (BWT) Accuracy Value	0.604 64	Weaning Weight (WWT) Accuracy Value	<b>Top 10%</b>	3.295 64
Maternal Weaning Weight (MWWT)	0.342	Post Weaning Weight (PWWT) Accuracy Value	<b>Top 5%</b>	6.686 68
Post Weaning Eye Muscle Depth (PEMD) Accuracy Value	<b>Top 15%</b> 1.604 72	Post Weaning Fat (PFAT)	<b>Top 1%</b>	-5.514
Number of Lambs Born (NLB) Accuracy Value	0.037 27	Number of Lambs Weaned (NLW) Accuracy Value		0.024 23
Carcass Plus Index	<b>Ranked 3rd in the breed</b> 171.8	SRC\$ Index		117.91

# Conventional ET

Sire(s)	Donor	Flush Date	Bred	Total		Fert	Embryos	Recips	Lambs
				Recovered	Unfert	Degen	Trans	used	Born
<b>Polypay</b>									
H21008	16479	9/13/2022	Live Cover	15	0	0	15	8	12
H21008	19672	9/13/2022	Live Cover	8	0	0	8	4	7
	21579	9/13/2022	Live Cover	13	10	1	2	1	2
H21008	16479	9/25/2023	Live Cover	6	6	0	0	0	0
MSF 2056	19672	9/25/2023	Live Cover	8	1	0	7	4	3
<b>Hampshire</b>									
BULLET	19073	9/25/2023	AI	13	0	1	12	6	5
								Total	29
								Average	4.833
<b>Xbred Research</b>									
1549	1317	7/22/2023	Live Cover	16	0	0	16	8	9
1590	1346	7/22/2023	Live Cover	27	27	0	0	0	0

Average cost per flush \$1,485.98  
 Average cost per lamb produced \$307.44

# ET Outcome



ID	Sex	Maternal Index	Disposition	NSIP Offspring
023336	Ram	120.7	Sold for Stud	34
023337	Ewe	117.4	Retained	3
023338	Ewe	120.9	Retained	4
023339	Ewe	123.8	Retained	4
023340	Ewe	119.1	Retained	3
023341	Ram	119.9	Sold	
023344	Ram	120.2	Sold	
023343	Ewe	118.6	Retained	3
023345	Ewe	120.2	Sold in Production Sale	
023349	Ram	119.8	Sold	
023350	Ram	119.8	Sold	
023354	Ewe	119.2	Retained	4
<b>120.0</b>			<b>Total offspring</b>	<b>55</b>

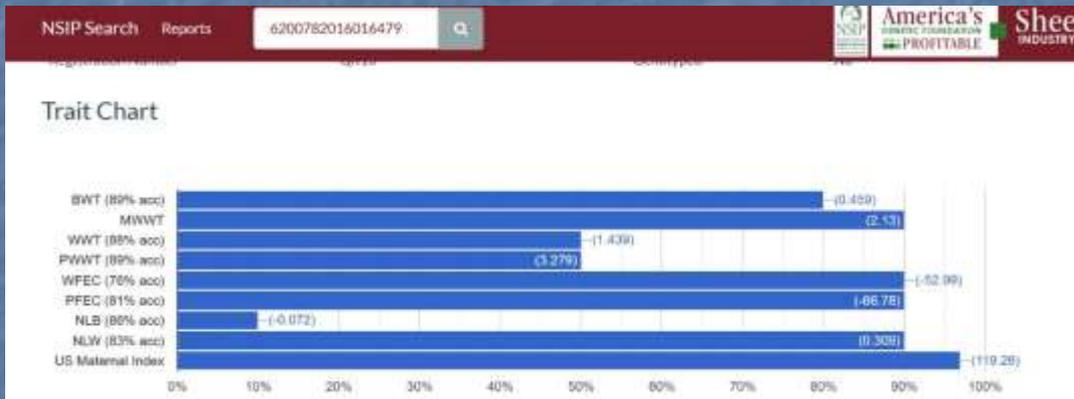
ID	Sex	Maternal Index	Disposition	NSIP Offspring
23332	Ewe	119.3	Retained	4
23334	Ram	117.3	Sold	3
23347	Ewe	121.8	Retained	4
23348	Ewe	118.6	Retained	4
24360	Ram	116.1	Used then Sold	33
24361	Ewe	116.9	Retained	3
<b>118.4</b>			<b>Total Offspring</b>	<b>51</b>



# UW 16479



NSIP Search		Reports		6200782016016479			
<b>General Information</b>							
LPN ID	6200782016016479	Total Progeny	31				
Breed Group	Maternal Wool	Flock Count	1				
Breed	Polypay	Sire	<a href="#">6200782015015437</a>				
Date of Birth	3/17/2016	Dam	<a href="#">6200782015015320</a>				
Gender	Female	Status	CURRENT				
Registration Number	QR13	Genotyped	No				



# UW 16479



- 31 Offspring
- 780 Grandoffspring
- 713 Great Grand



- 11 Daughters
- 14 Grand Daughters
- 6 Sons in NSIP
- 6 Grand Sons in NSIP



# LaOPU IVF ET

- Less invasive procedure/safer for donor
- Less expensive to begin with - additive
- Can be done successfully multiple times
- Can use multiple rams on the same ewe



# OPU IVF ET

Donor	Total Oocytes	Frozen	Trans	Recip	Embryos	Lambs Born	
24023	7	0	6	23467	2 Fresh	2	
					24305	2 Fresh	2
					24340	2 Fresh	1
24026	12	2	5	19351	2 Fresh	1	
					23304	2 Fresh	0
					24348	1 Fresh	1
					2	23454	2 Frozen
				Embryos Produced		11	Total Lambs Born



Total Cost	\$2,050.60
Average Cost	\$1,025.30
Average per Lamb	\$ 292.94

# OPU IVF ET



# Helpful Advice

- Double check semen quality
  - Fresh or Frozen
- Screen the recipis closely
  - Sound healthy and productive
- Use vasectomized rams
  - Only AI or put Embryos in ewes that respond to programming

# Questions???

