

Results of SCBA Sire Test in Paraguay

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Objectives...

- Evaluate specific US sires for growth and carcass traits
- Generate ultrasound measurements to calculate carcass EPDs, as well as birth, weaning and yearling EPDs
- Demonstrate the production of Senepol-sired calves in South America





Introduction

- **Project partially funded by USDA-FAS through USLGE**
- **In 1998 Jerry White initiated and oversaw the project**
- **Keith Bertrand set up designed project**
- **Matings were stratified across herd, breed of dam and age of dam**
- **Maintaining “connectedness” for the genetic analysis was utmost priority**
- **José Pereira managed project in Paraguay**

Materials and Methods

- **Semen from 10 US Sires sent to Paraguay late 1998**
- **Bred to native cows on 3 Paraguayan Ranches**
- **Calves born in 59-day period between August 14 and October 12, 1999**
- **337 calves were produced**
- **34 calves per sire**
- **Calves weaned at 222 ± 16 days**
- **Yearling weights collected at 404 ± 13 days**

- **Ultrasound data collect at 653 ± 13 days**
- **Calves managed under commercial Paraguayan conditions**
- **No creep feed**
- **All males were castrated**
- **Ultrasound collected by BIF / AUP certified technician, Rethel King**
- **Aloka 500V machine**
- **Designer Genes Automated Software**

Traits Measured

- Birth Weight
- Weaning Weight
- Yearling Weight
- Ultrasound Fat Thickness
- Ultrasound Ribeye Area
- Ultrasound Intramuscular Fat

Calves per Herd

<u>Herd</u>	<u>ID</u>	<u>Calves</u>
Ganadera 63	G	168
Paraguay Holding	P	78
Sosa	S	91





Sires Represented

<u>Reg. Num.</u>	<u>Name</u>	<u>ID</u>
1076492	ASL CR DUTCHMAN 26E	26E
1062010	CN 5562	5562
1063123	HBC CHIEF RENEGADE	Renegade
1064154	WC 850	850
1067681	CN 5825C	5825C
1072179	CN 5938D	5938D
1072703	CN 5991D	5991D
1073416	HBC HOT STUFF 8E	8E
1079233	NOCONA	Nocona
1080307	MAGNUM 27	Magnum

Data Summary

Number of Progeny per Sire

<u>Sire</u>	<u>Progeny</u>
26E	34
5562	40
5825C	42
5938D	37
5991D	31
850	36
8E	26
Magnum	33
Nocona	36
Renegade	22

Number of Progeny per Sex

<u>Sex</u>	<u>Calves</u>
Females	178
Steers	159

Calves per Age of Dam Age

<u>Age of Dam (years)</u>	<u>Day Range</u>	<u>Calves</u>
3	1004-1338	298
4	1339-1703	24
5	1704+	15

Calves per Dam Breed (CGroup)

<u>Dam Breed</u>	<u>CGroup Code</u>	<u>Frequency</u>
BR57_SG29_SI14	G_1	61
SI57_BR29_SG14	G_2	87
SG100	G_3	20
BR50_AN50	P_4	62
BR75_AN25	P_5	16
AN75_BR25	S_6	91

Calves per Sire & Herd

Sire	Herd			Total
	G	P	S	
26E	34	0	0	34
5562	30	10	0	40
5825C	0	18	24	42
5938D	18	0	19	37
5991D	14	17	0	31
850	36	0	0	36
8E	9	0	17	26
Magnum	10	5	18	33
Nocona	17	19	0	36
Renegade	0	9	13	22
Total	168	78	91	337

Calves per Sire & Breed of Dam (CGroup)

Breed of Dam (CGroup)

<u>Sire</u>	<u>Breed of Dam (CGroup)</u>						<u>Total</u>
	<u>AN75 BR25</u>	<u>BR50 AN50</u>	<u>BR57 SG29 SI14</u>	<u>BR75 AN25</u>	<u>SG100</u>	<u>SI57 BR29 SG14</u>	
	<u>S 6</u>	<u>P 4</u>	<u>G 1</u>	<u>P 5</u>	<u>G 3</u>	<u>G 2</u>	
26E	0	0	16	0	0	18	34
5562	0	0	0	10	10	20	40
5825C	24	18	0	0	0	0	42
5938D	19	0	18	0	0	0	37
5991D	0	17	0	0	0	14	31
850	0	0	18	0	0	18	36
8E	17	0	9	0	0	0	26
Magnum	18	0	0	5	10	0	33
Nocona	0	19	0	0	0	17	36
Renegade	13	8	0	1	0	0	22
Total	91	62	61	16	20	87	337

Calves per Age of Dam & Herd

<u>Age of Dam</u>	<u>Herd</u>			<u>Total</u>
	<u>G</u>	<u>P</u>	<u>S</u>	
3	156	51	91	298
4	2	22	0	24
5	10	5	0	15
Total	168	78	91	337





Measurement Statistics

Variable	N	Mean	StdDev	Min	Max
Bwt	337	72.13	9.54	46	97
Wnwt	318	412.1	52.3	273	595
WnAge	318	222.07	16.10	178	250
Yrwt	264	550.2	103.4	340	904
YrAge	264	404.19	12.71	369	427
USwt	305	795.0	124.5	534	1202
USAge	305	653.04	12.57	619	676
USFat	305	0.1341	0.0518	0.03	0.37
USREA	305	8.955	1.448	5.7	13.0
USIMF	305	3.252	0.962	1.74	6.88
DamAgeD	337	1176.8	254.4	1058	2956
DamAgeY	337	3.160	0.474	3	5

Statistical Model

Statistical Model and Significant Effects

<u>Effect</u>	<u>Bwt</u>	<u>Wnwt</u>	<u>Yrwt</u>	<u>Fat</u>	<u>REA</u>	<u>IMF</u>
Sire	*	***	***	*	ns	ns
Sex	ns	+	ns	ns	ns	ns
CGroup	*	***	***	ns	ns	ns
DamAge	ns	**	+	ns	ns	ns
Sex*CGroup	ns	***	X	***	*	*
Sex*DamAge	+	ns	X	ns	ns	ns
WnAge (cov)	X	***	X	X	X	X
YrAge (cov)	X	X	***	X	X	X
USAge (cov)	X	X	X	ns	ns	ns
ActUSWt (cov)	X	X	X	ns	***	ns

X=Effect not utilized in model, ns=P>.10, +P<.10, * = P<.05, ** = P<.01, *** = P<.001

Results and Discussion

Sire Birth Weight LS Means and EPDs

<u>Sire</u>	<u>LSMean</u>	<u>Std Error</u>	<u>EPD</u>
5825C	70.74	1.96	-0.1
5991D	70.76	2.35	-0.3
5562	70.90	1.93	-0.1
Renegade	73.28	2.37	3.3
5938D	74.18	2.07	1.7
850	75.95	2.10	2.8
8E	76.08	2.27	2.7
Nocona	76.08	2.14	3.5
Magnum	76.14	2.08	2.6
26E	77.75	2.14	3.0

Sire Weaning Weight LS Means and EPDs

<u>Sire</u>	<u>LSMean</u>	<u>Std Error</u>	<u>EPD</u>
5938D	436.3	8.5	29.1
850	423.9	8.6	12.3
26E	423.3	8.6	14.0
Nocona	418.6	8.7	13.6
5562	413.7	7.7	8.2
8E	409.1	9.0	11.7
5825C	400.6	7.9	7.9
Magnum	400.6	8.3	3.0
5991D	393.7	9.6	3.7
Renegade	372.8	9.5	5.2

Sire Yearling Weight LS Means and EPDs

<u>Sire</u>	<u>LSMean</u>	<u>Std Error</u>	<u>EPD</u>
Nocona	567.8	11.5	17.7
5562	566.5	9.7	9.8
850	563.1	11.3	11.5
Magnum	560.3	11.7	5.6
26E	555.0	11.5	16.0
5938D	549.8	13.6	33.4
5991D	533.3	12.4	6.1
8E	527.5	14.1	12.3
5825C	523.0	11.7	9.9
Renegade	510.5	12.3	11.3

Sire US Fat Thickness LS Means and EPDs

<u>Sire</u>	<u>LSMean</u>	<u>Std Error</u>	<u>EPD</u>
5938D	0.1032	0.0106	-0.008
26E	0.1108	0.0109	-0.004
8E	0.1111	0.0115	-0.005
5825C	0.1117	0.0099	-0.007
Renegade	0.1181	0.0118	-0.005
Nocona	0.1222	0.0109	0.001
850	0.1228	0.0106	0.006
5991D	0.1296	0.0118	0.004
5562	0.1362	0.0095	0.006
Magnum	0.1564	0.0108	0.017

Sire US Ribeye Area LS Means and EPDs

<u>Sire</u>	<u>LSMean</u>	<u>Std Error</u>	<u>EPD</u>
850	9.574	0.305	0.43
5991D	9.354	0.339	0.15
5562	9.294	0.273	0.20
26E	9.245	0.313	0.21
5938D	9.168	0.305	0.29
Nocona	9.164	0.314	0.18
5825C	9.024	0.285	-0.02
Magnum	8.764	0.311	0.01
Renegade	8.481	0.340	-0.23
8E	8.471	0.330	-0.21

Sire US IM Fat LS Means and EPDs

<u>Sire</u>	<u>LSMean</u>	<u>Std Error</u>	<u>EPD</u>
5825C	3.470	0.206	0.36
5991D	3.344	0.246	0.20
Magnum	3.285	0.226	0.10
5562	3.215	0.198	0.11
850	3.210	0.221	0.10
5938D	3.128	0.221	0.03
8E	3.061	0.239	0.02
Renegade	2.931	0.247	-0.10
26E	2.900	0.227	-0.16
Nocona	2.844	0.228	-0.19

Level of Significance for Sire EPDs Predicting LS means

<u>Variable</u>	<u>Significance Level</u>
Bwt	0.0010
Wnwt	0.0059
Yrwt	0.6483
Fat	<.0001
REA	<.0001
IMF	<.0001

Correlation Coefficients Between Sire EPDs and LS Means

<u>Trait</u>	<u>Correlation</u>
Bwt	0.87***
Wnwt	0.80**
Yrwt	0.17
Fat	0.96***
REA	0.94***
IMF	0.98***









Summary...

- **Research / demonstration project was considered extremely successful**
- **Significant sire differences were shown for most traits**
- **Results very highly correlated to EPDs from National Genetic Evaluation**
- **Yearling weight least correlated trait to EPDs**

Summary (cont)...

- **Carcass EPDs generated from this project have been very well received**
- **Distribution of Senepol genetics throughout South America have been a direct result of this project**

Working Crew





US - Paraguayan Commerce



