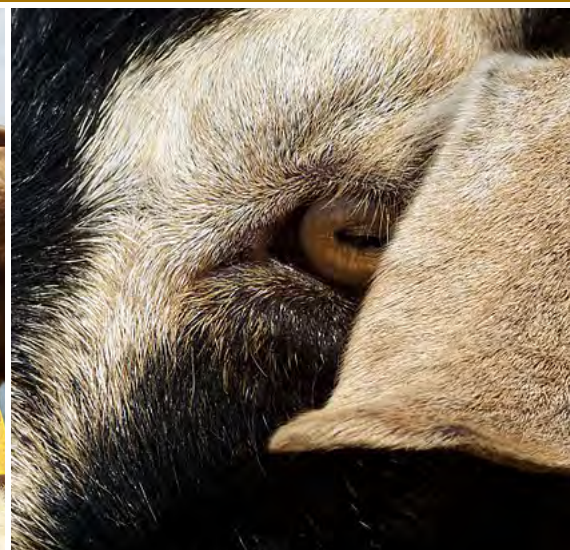




The Oklahoma Forage-Based Buck Test

SUMMARY REPORT: FIRST FIVE YEARS (2007 - 2011)

BY MARY PENICK
GOAT PROJECTS MANAGER



KERR CENTER FOR SUSTAINABLE AGRICULTURE
POTEAU, OKLAHOMA
2012



The Oklahoma Forage-Based Buck Test Summary Report: First Five Years (2007 - 2011)

Mary Penick

Goat Projects Manager

Kerr Center for Sustainable Agriculture



Kerr Center for Sustainable Agriculture, Poteau, Oklahoma

2012

©2012 Kerr Center for Sustainable Agriculture
Selections from this report may be used according to
accepted fair use guidelines.
Permission needed to reproduce in full.
Contact Maura McDermott at Kerr Center for permission.
Please link to this report on www.kerrcenter.com

KERR CENTER GOAT PROJECTS

Livestock Manager: Mary Penick
Ranch Herdsman: Andy Makovy
Livestock Program Assistant: Erin Campbell-Craven

TECHNICAL ADVISORY COMMITTEE, 2011

Test Agronomist: Chris Rice,
OCES Southeast District Agronomist
Test Nutritionist: Brian Freking, LeFlore County Educator
Test Veterinarian: Ann Wells, D.V.M.,
Kerr Center Director of Educational Programs

REPORT

Editing and Figures: Wylie Harris
Formatting and Layout: Tracy Clark, Argus DesignWorks
Communications Director: Maura McDermott

For more information contact:

Kerr Center
PO Box 588
Poteau, OK 74953
www.kerrcenter.com
mailbox@kerrcenter.com
918.647.9123 or fax 918.647.8712

This summary report and reports for each year of the test,
2007-2011, are available online at [www.kerrcenter.com/
stewardship/goats.html](http://www.kerrcenter.com/stewardship/goats.html) or by calling the Kerr Center.



Introduction

After five consecutive years, the Oklahoma Forage-Based Buck Test has become a recognized tool for herd improvement among commercial meat goat producers across a wide swath of the United States. The test protocol and procedures have been adjusted during that time to a point that appears to be working optimally. Enough data have been generated to begin to statistically analyze questions about the relationships between factors such as weather and parasite loads on the one hand, and the bucks' performance on the other. This document summarizes those findings from the first five years of the buck test.

Development of Test Protocol

Duration

For the first several years, the test began in mid-July and ended in late October. However, over time, it was noted that many of the test bucks began to enter rut during the last few weeks of the test.

In some cases, bucks that had gained well up until that point became more interested in fighting with the other bucks than in feeding. In such cases, the scoring system in effect punished high-performing animals for aggressive breeding behavior.

To avoid the confounding influence of rutting behavior, in 2011 the test period was shortened to end in the last week of September.

Supplementation

In the first year of the buck test, hand feeding allowed for more aggressive animals to consume a disproportionate share of supplement. To address this issue, free-choice feeding was used in the second year. This allowed for continual access to the supplement and increased the opportunities for all bucks to receive the maximum amount of supplement they needed.

However, this approach did not reproduce the rate of gain achieved with hand-fed soybean supplement in the first year. It seems likely that while the protein levels within the second-year supplement were adequate, the protein was bound with molasses in amounts that inhibited the desired foraging effect. Too many sugars (in the form of molasses in this case) can reduce the appetite-stimulating effect that protein has on the consumption of forage - exactly the opposite of the desired effect.

From the third year of the test onward, supplementation has been hand-fed in the form of dried distillers' grains (DDG) mixed with the ionophore Rumensin.

Weather

Both rain and heat have presented challenges to the bucks over the first five years of the test. Several strategies for coping with these extremes of weather have been developed and refined during that time:

- Providing ample shelter space is key, both to allow the bucks to get out of the wind and rain during wetter weather, and to offer shade in hotter periods.



- Rotating the bucks out of a pasture two days after a rain event minimizes their exposure to newly hatched parasites.

- Taking FECs and FAMACHA scores every 17 days, in coordination with the parasite life cycle, aids in early detection of increasing parasite loads.

- Planting forages that produce during the test period provides improved nutrition.

Response Variables

Initially, measurements of goat performance consisted of average daily gain (ADG), fecal egg count (FEC), and FAMACHA eye scoring (a measure of inner eyelid color as an indicator of the anemia caused by parasite infestation). Over time, two additional response variables have been added to this initial set.

Loin eye area

Carcass traits, as well as performance, are important measures to consider for breeding stock in any animal raised for meat. In recognition of that, the buck test introduced ultrasound

measurements of loin eye area (LEA) in 2010.

“Ultrasound” refers to high-frequency sound waves that reflect from a source to a detector in ways that reveal the different densities of the material through which they have passed. Technology based on this principle is used in medical imaging, and can also provide measurements of carcass traits from live animals.

The loin eye is one of the highest-priced cuts from a meat animal. The larger the area of this cut, the higher the percentage of retail product from the animal will be. LEA is also a moderately heritable trait (roughly 50%).

Ultrasound measurement of LEA thus allows meat goat producers to assess a heritable and commercially valuable carcass trait without taking the animal to slaughter. This information, along with performance measures, can inform breeding decisions to produce better commercial meat goat lines.

Source: Cole, K.V. 2005. Improving Carcass Merit with Ultrasound Scanning. Maryland Sheep and Goat Producer 4(4):3-5.

Scrotal circumference

Measurement of scrotal circumference (SC) began in the 2011 test. SC is an indicator of the buck's ability to produce sperm and is related to the age at which the buck itself, as well as his progeny, attain puberty. SC is measured at the widest part of the scrotum in millimeters or centimeters. A mature buck should have a scrotal circumference of 25 cm or greater, depending upon breed size. If it is less, the buck is considered a questionable breeder. Additionally, the testicles should have tone, about the consistency of a flexed biceps muscle.



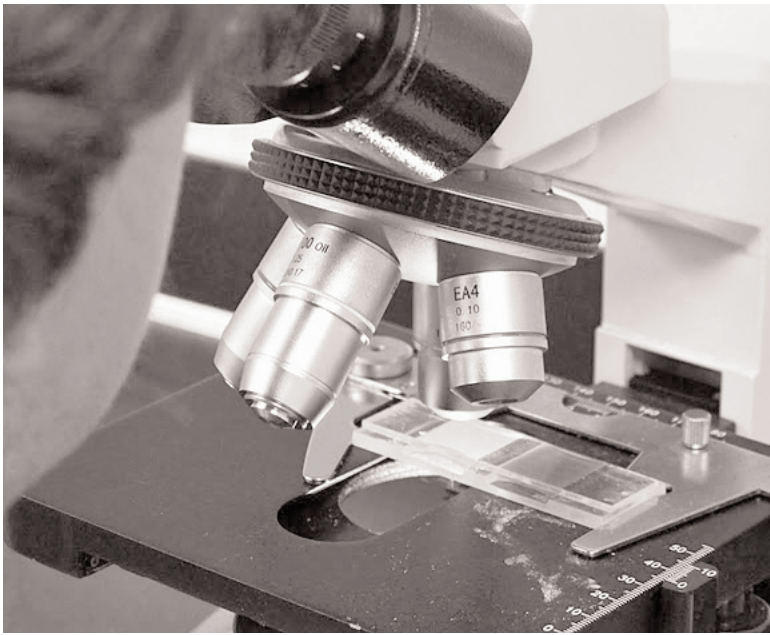
Relationships between Weather and Performance

Whole-test averages of ADG, FEC, and monthly precipitation and high temperature have been calculated, and examined for any influence of temperature and rainfall on the bucks' performance using regression analysis.

Weather can influence the bucks' performance directly - for example, if high summer temperatures lead to heat stress and reduced gain. Weather's influence on parasites might also exert an indirect effect on the bucks' performance, perhaps even stronger than direct effects.

Ideal conditions for parasites include both cooler temperatures and higher precipitation. Thus, a statistical model that includes both temperature and precipitation, and allows for the possibility of interaction between those two variables in their effects on performance, is intuitively appealing.

However, over the five years' worth of data from the buck test, temperature and precipitation are strongly negatively correlated with one another (coefficient of correlation = -0.96, $p = 0.01$). That is, so far summers during the buck test have tended to be either cool and wet, or hot and dry.



The results of these analyses are shown, along with regression equations and p values, in Figures 1-4 below.

Both temperature ($p = 0.04$) and precipitation ($p = 0.01$) have statistically significant effects on ADG; ADG increases with increasing temperature, and decreases with increasing precipitation. This is consistent with the observation that parasites flourish under cool, moist conditions.

That correlation between temperature and precipitation, together with the small sample size (one data point per year for each of five years) may limit the meaningfulness of a statistical model with full interaction. As such, for now, analysis remains focused on single-factor models to examine the effect of either temperature or precipitation on either ADG or FEC.

However, no direct effect of weather on parasite loads was observed. Although there is a trend toward higher FECs with both higher precipitation and lower temperatures, there was no statistically significant effect of either temperature or precipitation on FEC. This is probably due to a combination of high inherent variability in the FEC measurements, and small sample size.

FIGURE 1. AVERAGE DAILY GAIN VS. TEMPERATURE

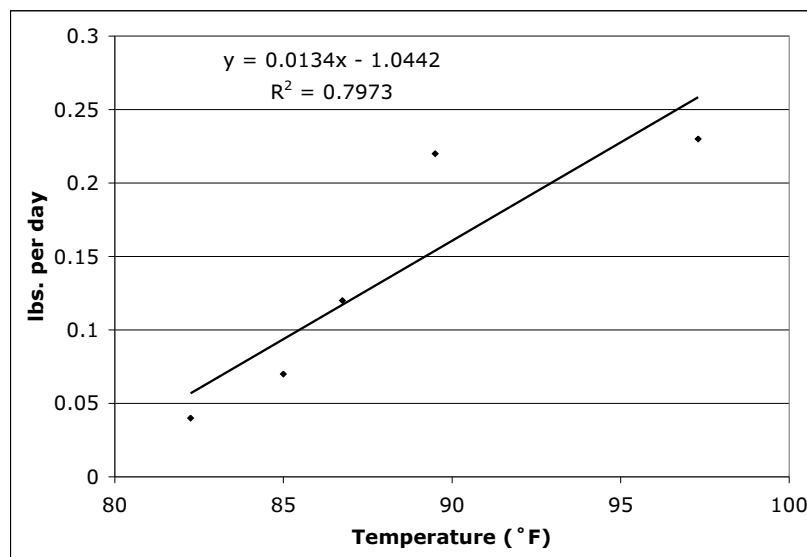


FIGURE 2. AVERAGE DAILY GAIN VS. RAINFALL

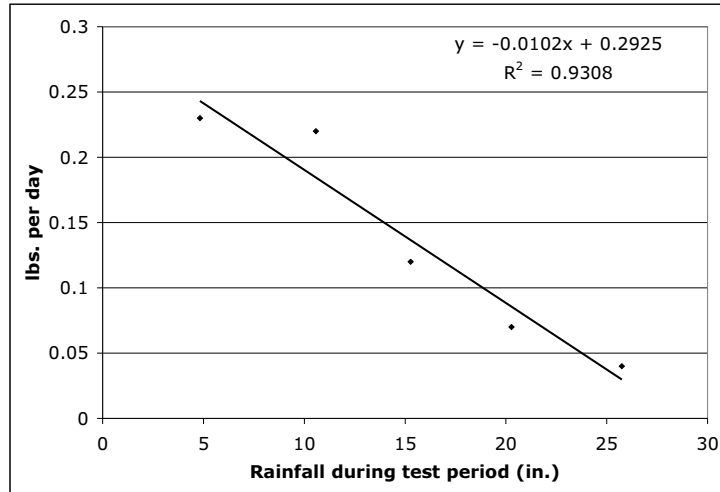


FIGURE 3. FECAL EGG COUNT VS. TEMPERATURE

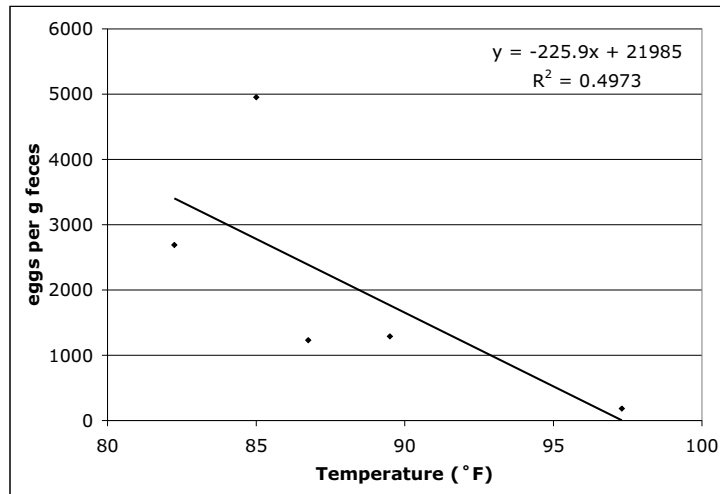
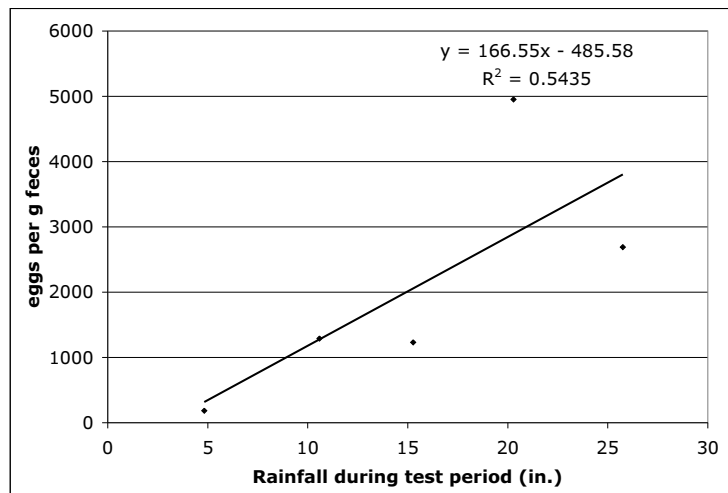


FIGURE 4. FECAL EGG COUNT VS. RAINFALL





Relationships between Parasite Load and Performance

Working with data from the 2009 and 2010 tests, Dr. Nada K. Nadarajah, of Auburn University's Department of Animal Sciences, documented statistical correlations between measures of the buck's performance and their parasite loads.

Table 1 shows averages of the relevant data from those two test years.

Nadarajah and colleagues tested for correlations between beginning weight on the one hand, and beginning FEC and beginning FAMACHA score on the other. In this comparison, there was a statistically significant negative correlation between beginning weight and beginning FAMACHA score in 2010, but not in 2009. In other words, in 2010, at the

time of a buck's entry into the test, the higher its FAMACHA score, the lower its weight.

The researchers also looked for the same sets of correlations at the end of the test. In addition, they checked for correlations between final weight, final FEC, and final FAMACHA score on the one hand, and ADG on the other.

In 2009, final weight showed statistically significant correlations with final FAMACHA score (negative) and ADG (positive). Final FEC was also significantly positively correlated with FAMACHA score, but was not significantly correlated with ADG. In other words, at the end of the 2009 test, bucks with higher weights had lower FAMACHA scores and higher ADG, and bucks with lower FECs had lower FAMACHA scores.

In 2010, the only statistically significant correlation among these variables was a strongly positive correlation between final weight and final ADG - again confirming the intuitive result that bucks that gained weight more rapidly during the test weighed more at the end.

Source: Nadarajah, K. et al. 2011. Gastro-intestinal parasitic infestation and its relationships with growth performance in meat goats on pasture with supplemental grain feeding test at the Kerr Center in Oklahoma. Poster abstract, American Society of Animal Science Annual Meeting, New Orleans, LA.

TABLE 1. 2009 AND 2010 ADG, FEC, AND FAMACHA SCORES

		2009	2010
Weight (kg)	Beginning	22.5 ± 3.4	23.3 ± 3.5
	Final	24.6 ± 3.3	33.7 ± 4.0
ADG (g/d)		19.9 ± 30.8	99.7 ± 34.4
FEC (eggs/g)	Beginning	976 ± 1239	405 ± 587
	Final	1688 ± 2540	1290 ± 742
FAMACHA	Beginning	2.6 ± 0.56	2.6 ± 0.62
	Final	2.1 ± 1.2	2.7 ± 0.47

Appendix A: List of Buck Test Winners, 2007 - 2011

Note: Some awards were not given every year.
 In 2007 and 2008, awards were given for third place
 ADG: 2007 - Sam and Carol Stafford (0.24 lbs/d); 2008 - Linda Sparks (0.15 lbs/d).

	2007	2008	2009	2010	2011
Grand Champion (ADG)	Terry Hankins (0.26 lbs/d)	Craig Adams (0.19 lbs/d)	Linda Sparks (0.25 lbs/d)	David Johnson (0.38 lbs/d)	Wes Pinneo (0.36 lbs/d); Mary Kay Sinclair (0.36 lbs/d)
Reserve Grand Champion (ADG)	DeWayne Maloy (0.24 lbs/d)	Fred Elder (0.16 lbs/d)	Duff & Laura Sandness (0.15 lbs/d)	Wes Pinneo (0.34 lbs/d)	Wes Pinneo (0.35 lbs/d)
Top Herdsman (ADG)	Sky & Deborah Shivers (0.23 lbs/d)	Craig Adams (0.13 lbs/d)	Linda Sparks (0.15 lbs/d)	David Johnson (0.31 lbs/d)	Wes Pinneo (0.36 lbs/d)
Reserve Top Herdsman (ADG)					Jean Gullion; Linda Sparks (0.28 lbs/d)
Grand Champion (FEC)			Wes Pinneo (50 eggs/g)	Sky Shivers (216 eggs/g)	Jean Gullion; Randy Penn; Wes Pinneo; Jill Zink (0 eggs/g)
Reserve Grand Champion (FEC)					Wes Pinneo; Linda Sparks (12.5 eggs/g)
Top Herdsman (FEC)		Richard Mayer (1,883 eggs/g)	Craig Adams (1,400 eggs/g)	Sky Shivers (258 eggs/g)	Wes Pinneo; Randy Penn (28.5 eggs/g)
Reserve Top Herdsman (FEC)					Shane Hesterman (50 eggs/g)

Appendix B: Weather, Forage, and Performance, 2007 - 2011

		<u>2007</u>	<u>2008</u>	<u>2009</u>	<u>2010</u>	<u>2011</u>
Rainfall						
(in.)	July	6.22	0.18	4.93	3.20	0.04
	August	0.63	7.13	2.45	1.83	2.75
	September	4.45	10.52	9.50	3.79	2.04
	October	3.97	2.45	8.87	1.76	
	Test total	15.27	20.28	25.75	10.58	4.83
Temperature						
(°F)	July					
	High	88.0	95.0	93.0	93.0	103.0
	Average	77.0	80.5	78.7	81.8	87.4
	Low	68.0	67.0	66.0	72.0	72.0
	August					
	High	96.0	90.0	89.0	99.0	102.0
	Average	82.0	77.7	76.3	83.7	86.0
	Low	70.0	68.0	65.0	70.0	72.0
	September					
	High	86.0	81.0	80.0	87.0	87.0
	Average	72.6	69.1	69.5	73.4	70.2
	Low	62.0	58.0	60.0	61.0	54.0
	October					
	High	77.0	74.0	67.0	79.0	
	Average	63.5	58.2	57.4	59.1	
	Low	51.0	44.0	48.0	41.0	

		<u>2007</u>	<u>2008</u>	<u>2009</u>	<u>2010</u>	<u>2011</u>	
Forage (lbs./ac.)	July	Paddock 1	9000		3226	2318	350
		Paddock 2	3750		3691	3268	1634
		Paddock 3			3778	4161	1830
		Paddock 4			4023	2937	2549
		Paddock 5			4174	2200	1196
	August	Paddock 1			5904	6588	299
		Paddock 2	1900		5355	7470	326
		Paddock 3	1000		3838	8312	251
		Paddock 4			5882	5906	410
		Paddock 5			4927	5944	1073
	September	Paddock 1	4200		5948	4446	348
		Paddock 2	2300		3735	4785	845
		Paddock 3			2511	6392	339
		Paddock 4			3370	5591	256
		Paddock 5			4298	3847	608
	October	Paddock 1	1700		4443	2271	
		Paddock 2	2050		6078	2964	
		Paddock 3	2000		6326	4514	
		Paddock 4			3259	4371	
		Paddock 5			7636	3091	
	Average	Paddock 1	4967		4880	3906	332
		Paddock 2	2500		4715	4622	935
		Paddock 3	1500		4113	5845	807
		Paddock 4			4134	4701	1072
		Paddock 5			5259	3771	959
	Final FEC (eggs/g)		1231	4954	2689	1290	184
	Final ADG (lbs./d)		0.12	0.07	0.04	0.22	0.23
LEA (cm ²)					14.5	21.6	
SC (cm)						24.8	

Appendix C: Individual Buck Results, 2007 - 2011

Buck Test Results 2007

	Consigner	Test ID	Start Weight (lbs.)	End Weight (lbs.)	ADG (lbs./d)	Final FEC (eggs/g)
1	Hankins	42	58.0	84.5	0.26	700
2	Maloy	27	62.0	86.5	0.24	700
3	Stafford	36	45.0	69.0	0.24	1000
4	Shivers	47	47.0	70.5	0.23	800
5	Allen	18	50.0	70.0	0.23	100
6	Shivers	48	46.0	68.5	0.22	1900
7	Shivers	50	49.0	70.0	0.21	100
8	Shivers	49	52.0	72.5	0.20	600
9	Barber	30	51.0	70.0	0.19	500
10	Hankins	41	59.0	78.0	0.19	300
11	Mayer	12	79.0	97.5	0.18	200
12	Shivers	46*	50.0	68.5	0.18	1100
13	Hankins	43	56.0	73.5	0.17	3900
14	Barber	32	57.0	73.5	0.16	300
15	Hankins	39	62.0	78.5	0.16	500
16	Allen	24	47.0	66.5	0.16	800
17	Kivette	8	52.0	68.0	0.16	900
18	Kivette	9	57.0	73.0	0.16	900
19	Barber	35	48.0	64.0	0.16	900
20	Stafford	38	35.0	51.0	0.16	300
21	Barber	33	52.0	67.5	0.15	2000
22	Smith	17	41.0	56.0	0.15	200
23	Shivers	45	42.0	56.5	0.14	1900
24	Smith	18	43.0	55.5	0.12	900
25	Lane	25	39.0	51.0	0.12	2800
26	Sandness	21	65.0	76.0	0.11	300
27	Allen	W124	46.0	56.5	0.10	600
28	Shelby	3	46.0	56.0	0.10	900
29	Shelby	6	48.0	58.0	0.10	400
30	Bloom	19	52.0	62.0	0.10	400
31	Barber	34	55.0	64.5	0.09	800
32	Stafford	37	37.0	46.5	0.09	800
33	Barnes	15	50.0	59.0	0.09	400
34	Stroud	11	66.0	74.5	0.08	3600
35	Hankins	40	66.0	74.5	0.08	2600
36	Shelby	5*	40.0	48.0	0.08	300
37	Barnes	16	63.0	68.5	0.05	300
38	Lane	24*	39.0	44.0	0.05	1700
39	Wilbins	28	48.0	53.0	0.05	1200
40	Wilbins	29*	50.0	51.5	0.01	5800
41	Barber	31	52.0	53.5	0.01	1700
42	Mayer	13	85.0	86.0	0.01	500
43	Shelby	7*	52.0	52.0	0.00	300
44	Shivers	44	49.0	56.5	0.07	500
45	Shelby	4*	46.0	50.0	0.04	500
46	Jones	10*	78.0	77.0	-0.01	2100
47	Mayer	14*	58.0	57.0	-0.01	8600
48	Sandness	22*	66.0	55.5	-0.10	500

Buck Test Results 2008

	Consigner	Test ID	Start Weight (lbs.)	End Weight (lbs.)	ADG (lbs./d)	Final FEC (eggs/g)
1	Adams	61	32.0	51.5	0.19	1100
2	Elder	1	40.0	56.0	0.16	1350
3	Sparks	5	37.0	52.5	0.15	3400
4	Sandness	31	62.0	76.5	0.14	5450
5	Armstrong	2	48.0	60.0	0.12	450
6	Adams	47	51.0	63.0	0.12	5250
7	Sparks	4	38.0	49.5	0.11	1550
8	Raynes	6	32.0	43.5	0.11	2250
9	Shivers	20	48.0	59.0	0.11	3350
10	Mayer	50	37.0	47.5	0.10	2250
11	Waller	22	65.0	74.5	0.09	2650
12	Kivett	33	38.0	47.0	0.09	5450
13	Evans	38	45.0	54.0	0.09	6050
14	Adams	60	47.0	56.0	0.09	5250
15	Wilbins/Bohn	36	51.0	59.5	0.08	4700
16	Barnes	39	50.0	58.5	0.08	2000
17	DSL	19	48.0	56.0	0.08	1850
18	Kivett	32	37.0	45.0	0.08	9600
19	Barnes	42	68.0	75.5	0.07	25500
20	Sandness	46	47.0	54.5	0.07	22500
21	DSL	27	43.0	50.0	0.07	500
22	Mayer	59	50.0	56.5	0.06	2500
23	Ware	44	50.0	56.0	0.06	13750
24	Adams	62	41.0	47.0	0.06	2300
25	Sparks	8	35.0	40.0	0.05	4850
26	Freeman	17	46.0	50.0	0.04	2800
27	Shivers	18	40.0	44.0	0.04	100
28	Mayer	35	51.0	55.0	0.04	900
29	Sandness	57	41.0	45.0	0.04	4250
30	Shivers	21	36.0	39.0	0.03	4500
31	Sandness	34	55.0	58.0	0.03	12550
32	Maloy	30	44.0	45.5	0.01	3300
33	Barnes	48	68.0	69.5	0.01	1650
34	Guffey	49	46.0	47.5	0.01	2750
35	Freeman	16	48.0	47.0	-0.01	1850
36	Waller	23	38.0	35.5	-0.02	7850

Buck Test Results 2009

	Consigner	Test ID	Start Weight (lbs.)	End Weight (lbs.)	ADG (lbs./d)	Final FEC (eggs/g)
1	Adams	4	56.1	67.7	0.1	500
1	Sparks	53	47.3	72.1	0.3	150
2	Adams	41	47.3	57.2	0.1	2300
3	Sparks	18	45.1	60.5	0.2	5800
4	Adams	48	44.0	51.2	0.1	1400
5	Sparks	28	57.2	62.7	0.1	1400
6	Barnes	6	39.6	51.7	0.1	4700
7	Sparks	20	55.0	56.7	0.0	2350
8	Buckman	46	52.8	61.1	0.1	850
9	Sparks	29	60.5	47.3	-0.1	2100
10	Buckman	21	39.6	46.8	0.1	700
11	Waller	55	50.6	53.4	0.0	2450
12	Buckman	49	47.3	52.3	0.1	1150
13	Waller	19	64.9	62.2	0.0	450
14	Buckman	2	55.0	58.9	0.0	850
15	Buckman	3	55.0	51.2	0.0	1700
16	Hankins	12	40.7	55.0	0.1	6600
17	Hankins	9	57.2	62.7	0.1	750
18	Hankins	35	52.8	51.7	0.0	1350
19	Hankins	39	44.0	42.9	0.0	900
20	Hesterman	24	48.4	57.8	0.1	1950
21	Hesterman	47	49.5	50.6	0.0	4650
22	Hesterman	1	53.9	50.6	0.0	1600
23	Hesterman	27	58.3	55.6	0.0	3100
24	Hogan	23	61.6	62.7	0.0	700
25	Hogan	11	63.8	57.8	-0.1	550
26	Kerr	32	45.1	53.9	0.1	7100
27	Kerr	45	48.4	56.1	0.1	1550
28	Kerr	34	49.5	56.1	0.1	2100
29	Kerr	22	51.7	55.6	0.0	500
30	Kerr	15	56.1	58.9	0.0	4900
31	Kerr	30	48.4	51.2	0.0	4150
32	Kerr	31	46.2	47.9	0.0	10600
33	Kerr	16	51.7	45.7	-0.1	6400
34	Perkins	44	42.9	51.2	0.1	250
35	Perkins	25	39.6	46.2	0.1	150
36	Pinneo	13	50.6	54.5	0.0	1300
37	Pinneo	50	48.4	49.5	0.0	50
38	Pinneo	42	53.9	53.4	0.0	3800
39	Pinneo	8	45.1	42.9	0.0	1500
40	Sandness	51	48.4	63.3	0.2	8200
41	Sandness	56	53.9	68.8	0.2	3450
42	Sandness	7	50.6	57.8	0.1	4600
43	Sandness	58	50.6	57.2	0.1	2600
44	Sandness	17	56.1	51.2	-0.1	8700
45	Smith	5	37.4	45.1	0.1	1100
46	Smith	54	33.0	38.0	0.1	4800
47	Smith	52	36.3	39.6	0.0	250

Buck Test Results 2010

	Consigner	Test ID	Start Weight (lbs.)	End Weight (lbs.)	ADG (lbs./d)	Final FEC (eggs/g)	LEA (cm ²)
1	Johnson	1010	52.0	90.0	0.38	1000	15.0
2	Pinneo	1054	46.0	80.5	0.34	600	17.0
3	Johnson	1030	41.0	74.0	0.33	1550	14.1
4	Sandness	1016	47.0	78.5	0.31	300	14.5
5	Sparks	1031	45.0	75.5	0.30	500	17.8
6	Sandness	1036	55.0	85.0	0.30	750	14.2
7	Barnes	1018	57.0	87.5	0.30	750	15.0
8	Hays	1027	61.0	90.0	0.29	1250	13.8
9	Shivers	1049	54.0	82.5	0.28	850	15.0
10	Sinclair	106	39.0	67.5	0.28	700	14.5
11	Guffey	108	56.0	83.0	0.27	900	16.7
12	Sandness	1048	46.0	73.0	0.27	2950	14.7
13	Shivers	1045	57.0	83.0	0.26	500	16.8
14	Sparks	1015	57.0	83.5	0.26	150	14.3
15	Pinneo	1042	49.0	75.5	0.26	1200	13.4
16	Sandness	1050	58.0	84.0	0.26	1000	14.2
17	Sinclair	102	40.0	65.5	0.25	800	13.5
18	Pinneo	1011	43.0	68.5	0.25	1650	14.6
19	Guffey	1034	57.0	82.0	0.25	950	15.5
20	Hays	1056	57.0	82.5	0.25	2700	13.9
21	Barnes	1014	60.0	85.0	0.25	2000	15.8
22	Sandness	1028	54.0	78.5	0.24	450	14.7
23	Hays	1051	51.0	75.5	0.24	1150	14.9
24	Sparks	1053	49.0	73.5	0.24	2650	14.3
25	Barnes	107	70.0	94.5	0.24	2300	14.4
26	Barnes	1013	58.0	81.5	0.23	550	15.9
27	Adams	1022	53.0	76.0	0.23	950	14.3
28	Pinneo/Adams	1021	39.0	62.0	0.23	500	13.5
29	Johnson	1024	49.0	72.0	0.23	1500	14.2
30	Pinneo	1035	47.0	70.0	0.23	1850	13.6
31	Pen	1019	52.0	75.5	0.23	1200	13.8
32	Shivers	1040	50.0	72.0	0.22	650	14.2
33	Sinclair	1037	42.0	64.5	0.22	900	16.0
34	Guffey	101	57.0	79.5	0.22	1600	15.2
35	Sandness	1012	64.0	85.0	0.21	400	15.8
36	Sparks	1052	44.0	65.5	0.21	3000	14.9
37	Pinneo	1032	43.0	64.5	0.21	450	14.9
38	Hesterman	1058	51.0	71.0	0.20	2700	13.8
39	Shivers	1041	52.0	72.5	0.20	1250	13.7
40	Sandness	1047	47.0	66.0	0.19	750	13.5
41	Hays	105	60.0	79.0	0.19	1600	13.9
42	Hankins	1020	49.0	68.5	0.19	1950	13.1
43	Pen	1029	53.0	72.5	0.19	2650	14.8
44	Sandness	1046	49.0	68.0	0.19	1550	14.8
45	Shivers	1038	46.0	64.0	0.18	800	13.6
46	Johnson	104	39.0	57.0	0.18	1400	13.2
47	Hankins	1025	62.0	80.0	0.18	1950	13.0
48	Shivers	1023	47.0	63.0	0.16	1250	12.9
49	Guffey	1033	56.0	72.5	0.16	1000	15.2
50	Adams	103	63.0	78.5	0.15	800	15.7
51	Shivers	1044	59.0	74.5	0.15	650	15.6
52	Hesterman	1059	45.0	59.5	0.14	1600	15.3
53	Sparks	1017	46.0	59.0	0.13	600	12.3
54	Hesterman	1057	49.0	60.0	0.11	1950	14.0
55	Hankins	109	58.0	68.0	0.10	1350	13.2
56	Adams	1026	60.0	65.0	0.05	2150	14.8
57	Hankins	1043	71.0	68.5	-0.02	2450	13.8

Buck Test Results 2011

	Consigner	Test ID	Start Weight (lbs.)	End Weight (lbs.)	ADG (lbs./d)	Final FEC (eggs/g)	LEA (cm ²)	SC (cm)
1	Pinneo	940	56	83	0.36	0	9.1	24
2	Pinneo	953	61	87.5	0.36	850	8.4	27
3	Sinclair	947	52	78.5	0.36	0	8.2	28
4	Pinneo	938	57	83	0.35	150	9.2	29
5	Gullion	929	49	74	0.34	600	7.8	24
6	Gullion	936	78	102.5	0.33	0	9.9	24
7	Sparks	939	55	77.5	0.30	50	10.0	24
8	Zink	945	59	81	0.30	200	8.1	25
9	Sparks	959	59	80	0.28	700	10.2	29
10	Johnson	942	57	77.5	0.28	100	9.3	25
11	Johnson	931	53	72.5	0.26	200	9.1	21
12	Sparks	961	54	73.5	0.26	100	8.9	24
13	Zink	946	51	70	0.26	100	6.5	24
14	Johnson	927	57	75	0.24	600	9.7	27
15	Pinneo	950	47	65	0.24	200	6.9	28
16	Hesterman	944	61	79	0.24	0	9.3	26
17	Barnes	952	45	62.5	0.24	700	7.5	23
18	Hesterman	965	57	74.5	0.24	250	9.6	25
19	Pinneo	954	54	71.5	0.24	100	9.7	25
20	Barnes	930	49	66	0.23	550	6.0	23
21	Hesterman	926	60	77	0.23	0	8.3	24
22	Pinneo	958	57	74	0.23	0	7.4	26
23	Penn	957	73	89	0.22	0	9.5	25
24	Sinclair	962	41	57	0.22	0	8.1	22
25	Barnes	933	53	68	0.20	150	8.4	27
26	Sinclair	963	40	55	0.20	150	5.9	22
27	Hesterman	964	61	75.5	0.20	100	7.7	26
28	Gullion	928	77	90.5	0.18	200	9.2	24
29	Barnes	956	52	65.5	0.18	100	9.0	20
30	Sparks	937	51	64.5	0.18	50	8.2	23
31	Johnson	934	57	70	0.18	300	6.2	22
32	Pinneo	941	63	76	0.18	0	7.2	26
33	Sparks	960	52	63.5	0.16	100	8.9	25
34	Hesterman	935	68	79	0.15	100	7.8	27
35	Penn	949	71	82	0.15	100	9.0	26
36	Zink	955	58	69	0.15	0	8.5	23
37	Hesterman	943	69	79	0.14	350	9.0	27
38	Johnson	951	65	72	0.09	100	8.6	25
39	Perkins	948	57	63.5	0.09	50	8.2	24
40	Penn	932	68	73	0.07	50	9.8	24