

**30th NORTH CAROLINA LAYER PERFORMANCE AND  
MANAGEMENT TEST  
Volume 30 No. 2**

**Report on Pullet Rearing Period**

**Dates of Importance:**

The eggs were set on January 27, 1992 at the Piedmont Research Station (NCDA) Poultry Unit. The flock was hatched on February 19, 1992 and moved to laying facilities during June 25 to 28, 1992 at 18 weeks of age.

**Experimental Design:**

The test was a factorial arrangement of treatments and the main effects were strain and pullet housing. The analysis was divided by pullet and type of house, then data from both houses were pooled and analyzed.

Strain--Samples of fertile eggs were provided/acquired from the breeders. All eggs were set and hatched concurrently. A total of eight white egg and four brown egg strains were in the test. A minimum of 1010 white and brown egg pullets/strain were started at the initiation of the test. If the number of pullets hatched were below the prescribed numbers, the chicks were divided as equally as possible between the two grow houses.

Pullet Housing--The chicks were divided between two separate brood-grow houses with white egg and brown egg replicates being intermingled throughout. The white egg strains occupied approximately 2/3 of each house and brown egg strains occupied the other third of each house. All strains were assigned to be represented as equally as possible in all cage rows and cage levels in each house.

House 6 - is an environmental controlled, closed brood-grow facility with 4 banks of triple-deck cages. Each row and bank of cages were assigned a row number, and each 3-cage section within each row and level/row was assigned a replicate number. Each bank of cages were designated as blocks for statistical analysis. Thus, each block consisted of two rows containing 16 replicates on each level. The white and brown egg strains were assigned in the same manner to blocks 1 through 4 to insure that each strain was represented at least once in each block. All chicks were brooded in the center level of cages on paper within each of the replicate series (i.e. the 3 cage levels) within each row. Each center-cage-level replicate was filled with 90 white-egg and 90 brown-egg (30 per 24"x20" cage) pullets on the day of hatch. At 42 days of age, 1/3 of the birds in each brooding replicate were moved to the top cages, and 1/3 will be moved to the bottom cages for a final rearing allowance of 310 sq cm (48 sq in) for the white and brown egg layers.

House 8 - is an open-sided brood-grow facility with six rows of 48" wide by 40" deep single deck cages and each cage has been assigned a replicate number. The white-egg

and brown-egg strains were randomly assigned to rows 1 through 6 in a restricted random manner with the restriction being each strain-replicate group was approximately equally represented in each row of cages. Forty white-egg and brown-egg females were started and grown in each replicate.

**Pullet Management and Nutrition:**

Pullets were fed ad libitum by hand daily. Feed consumption and body weights were monitored bi-weekly beginning at 4 weeks of age. All mortality was recorded daily, but mortality occurring from hatch through 6 days of age has been excluded from the 30th NCLP&MT Grow Report. Starter (with Amprol at 1 lb/ton), Grow and Developer diets are provided in Appendix E. Each pullet placed was provided with 1 kg per bird. Thus, the white-egg and brown-egg replicates in brood-grow House 6 (90 females) should be given 92 kg of starter feed per replicate. The white-egg and brown-egg replicates in brood-grow House 8 (40 females) were given 41 kg of starter feed per replicates. Thereafter, all birds should be placed onto the grower diet until 12 weeks of age. From 12 weeks (May 14, 1992) to approximately 19 weeks (July 2, 1992) of age, all strains were provided with the developer diet.

**Pullet Vaccination and Beak Trimming Schedule**

Pullet vaccination and beak trimming schedules are outlined below:

<u>Age</u>	<u>Date</u>	<u>Event</u>
Hatch	February 19, 1992	HVT Marek's Vac. by injection in neck
Day 10	March 1, 1992	Newcastle (B1) and Bronchitis (Mass.) via aerosol spray (Triple Vac)
Day 6 thru Day 8	February 26, 1992 February 28, 1992	Precision Beak Trim
Day 35	March 26, 1992	Newcastle (LaSota) and Bronchitis (Mass.) via aerosol spray (ComboVac)
Day 63	April 23, 1992	Newcastle (LaSota) and Bronchitis (Mass.) via aerosol spray (ComboVac)

Day 70      April 30, 1992      Fowl Pox and Avian Encephalomyelitis  
vaccination via the wing web

Day 105      June 4, 1992      Newcastle (Lasota) and Bronchitis (Mass.)  
via aerosol spray (ComboVac)

**Lighting Schedule**

The lighting schedule for the pullet facilities is outlined below:

<u>Age</u>		<u>Photoperiod (hrs/day)<sup>1</sup></u>	
		Controlled Environment	Open-Sided
Days 1-3	February 19-22, 1992	23	23
Day 4 through 18 Weeks	February 22 through June 25, 1992	15	15
Move to lay house	June 25-28, 1992	15	15
19 weeks	July 3, 1992	15.5	15.5
20 weeks	July 10, 1992	16.0	16.0

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<sup>1</sup>On Day 4, time clocks were set to turn lights on 1/2 hour before sunrise and turn on lights 1/2 hour after sunset local daylight time for June 21.

**Diet Formulations**

**BROOD-GROW PERIOD DIETS**

**Diet<sup>1</sup> Identification**

Ingredient	Starter	Grower	Developer
	-----Pounds per Ton-----		
Corn	1168.4	1312.2	1391.2
Soybean meal	672.3	431.3	324.1
Wheat Midds	90.8	173.8	200.0
Limestone	23.8	34.3	34.3
Methionine		1.5	2.7
Dical	32.9	34.7	35.5
Salt	5.0	5.0	5.0
Vit. premix	2.0	2.0	2.0
Min. premix	1.0	1.0	1.0
Mold Inhibitor	2.0	2.0	2.0
Tracer	1.0	1.0	1.0
Lysine	0.8	1.2	1.2
Protein %	22.0	17.5	15.5
ME kcal/kg	2976.0	2976.0	2993.0
Calcium %	0.90	1.10	1.10
T. Phos. %	.71	.69	.69
Lysine %	1.27	.95	.80
TSAA %	.71	.65	.65

<sup>1</sup>Diets in crumblized form.

**DESCRIPTION OF DATA TABLE STATISTICS**

Rearing period performance of white egg and brown egg strains are shown in Tables 1-9 and 10-18, respectively. Following are the descriptions of the observations taken throughout the rearing period. Data presented in this report will be in metric.

**Breeder (Strain):**

Short identification of the breeder and strain of the stock. See more complete information in the following data tables.

**Protein per Bird to 126 Days:**

Calculated cumulative protein intake per bird to 126 days.

**Metabolizable Energy per Bird to 126 Days:**

Calculated cumulative metabolizable energy intake per bird to 126 days.

### **Feed Cost per Bird to 126 Days:**

Calculated feed cost per bird to 126 days. Using average regional feed prices; Starter \$182.24/T; Grower \$165.43/T; Developer \$155.45/T.

### **Mortality 7-126 Days:**

The percentage of the birds housed which died during days 1-126. Males removed are excluded.

### **Body Weights (4, 6, 8...18 Weeks):**

Bi-weekly average body weights of all birds within representative cages. Sample size for these were approximately 60 birds/strain/brood-grow house. Cages selected were, as much as possible, a representative sample from all cage levels, rows, and strains.

### **Feed Consumption (1-4, 5-6...17-18, 1-18):**

Feed consumption per bird within the time periods indicated. The last column in the table is the cumulative feed intake per bird throughout the growing period. Estimated feed consumed by males is excluded from the calculation.

### **Statistical Analyses and Separation of Means:**

Analyses of variance were performed on all data. Separate analyses were conducted for white and brown egg strains. Significant differences ( $P < .01$ ) within white and brown egg strains are noted by different letters among columns of means. Significant strain effects are noted in Tables 1-3, significant interactions between strain and pullet house are noted in Tables 1-3, significant interactions between strain and pullet house are noted in Tables 4-6 for the closed pullet facility, and Tables 7-9 for the open pullet facility.

### **Metric Conversions**

1 lb = 453.6 g  
1 lb = .4536 kg

1 g = .03527 oz  
1 kg = 2.204 lb

1 oz = 28.35 g

1 g = 1000 mg  
1 kg = 1000 g

Table 1. Feed Consumption of White Egg Entries in Closed Housing,  
30th NCLP & MT

Breeder	------(Week of Age)-----								
	1-4	5-6	7-8	9-10	11-12	13-14	15-16	11-18	1-18
------(kg per bird)-----									
Shaver (SC288A)	.59	.54	.68 <sup>AB</sup>	.79	.92	.96 <sup>ABC</sup>	.99 <sup>ABC</sup>	.92 <sup>C</sup>	6.39 <sup>AB</sup>
Hisex (White)	.57	.54	.69 <sup>AB</sup>	.80	.90	.96 <sup>ABC</sup>	.97 <sup>BCD</sup>	.96 <sup>BC</sup>	6.40 <sup>AB</sup>
ISA (B300-A)	.60	.54	.67 <sup>AB</sup>	.79	.90	.96 <sup>ABC</sup>	1.01 <sup>ABC</sup>	1.03 <sup>AB</sup>	6.50 <sup>AB</sup>
ISA (B300-B)	.61	.53	.67 <sup>AB</sup>	.79	.88	.94 <sup>BC</sup>	1.04 <sup>AB</sup>	.97 <sup>ABC</sup>	6.43 <sup>AB</sup>
Hyline (W-36)	.60	.51	.65 <sup>B</sup>	.74	.79	.86 <sup>C</sup>	.89 <sup>D</sup>	.84 <sup>D</sup>	5.89 <sup>C</sup>
H & N (Nick Chick)	.61	.56	.69 <sup>AB</sup>	.80	.89	.97 <sup>AB</sup>	1.00 <sup>ABC</sup>	.92 <sup>CD</sup>	6.43 <sup>AB</sup>
Dekalb (Delta)	.62	.54	.65 <sup>B</sup>	.75	.86	.92 <sup>BC</sup>	.94 <sup>CD</sup>	.89 <sup>CD</sup>	6.18 <sup>BC</sup>
Dekalb (XL)	.66	.54	.70 <sup>A</sup>	.81	.92	1.05 <sup>A</sup>	1.06 <sup>A</sup>	1.04 <sup>A</sup>	6.78 <sup>A</sup>
Average	.61	.54	.67	.78	.88	.95	.99	.95	6.37

<sup>ABCD</sup>Different letters denote significant differences within column (P<.01).

Table 2. Feed Cost and Mortality of White Egg Entries in Closed Housing,  
30th NCLP & MT

Breeder	Met.		Feed		Cost (8 - 126 d) (%)	Livability
	Protein (kg)	Energy (kcal)	Lysine (g)	TSAA (g)		
Shaver (SC288A)	1.13 <sup>B</sup>	19020 <sup>AB</sup>	61.5 <sup>AB</sup>	42.6 <sup>AB</sup>	1.16 <sup>AB</sup>	97.3 <sup>ABC</sup>
Hisex (White)	1.13 <sup>B</sup>	19051 <sup>AB</sup>	61.3 <sup>B</sup>	42.5 <sup>AB</sup>	1.16 <sup>AB</sup>	95.4 <sup>BC</sup>
ISA (B300-A)	1.16 <sup>AB</sup>	19329 <sup>AB</sup>	63.0 <sup>AB</sup>	43.4 <sup>AB</sup>	1.18 <sup>AB</sup>	98.0 <sup>AB</sup>
ISA (B300-B)	1.14 <sup>AB</sup>	19129 <sup>AB</sup>	62.3 <sup>AB</sup>	42.9 <sup>AB</sup>	1.17 <sup>AB</sup>	99.1 <sup>AB</sup>
Hyline (W-36)	1.04 <sup>C</sup>	17530 <sup>C</sup>	56.5 <sup>C</sup>	39.1 <sup>C</sup>	1.07 <sup>C</sup>	99.3 <sup>A</sup>
H & N (Nick Chick)	1.14 <sup>AB</sup>	19132 <sup>AB</sup>	61.9 <sup>AB</sup>	42.8 <sup>AB</sup>	1.17 <sup>AB</sup>	96.2 <sup>BC</sup>
Dekalb (Delta)	1.09 <sup>BC</sup>	18376 <sup>BC</sup>	59.4 <sup>BC</sup>	41.1 <sup>BC</sup>	1.12 <sup>BC</sup>	97.6 <sup>ABC</sup>
Dekalb (XL)	1.20 <sup>A</sup>	20175 <sup>A</sup>	65.5 <sup>A</sup>	45.2 <sup>A</sup>	1.23 <sup>A</sup>	92.7 <sup>C</sup>
Average	1.13	18968	61.4	42.5	1.16	97.0

<sup>ABC</sup>Different letters denote significant differences within columns (P<.01).



Table 3. Body Weight of White Egg Entries in Closed Housing,  
30th NCLP & MT

	------(Weeks of Age)-----				Breeder	4	6	8	10
	12	14	16	18					
	------(kg)-----								
Shaver (SC288A)		.30	.46	.65	.88	1.07 <sup>AB</sup>	1.20 <sup>AB</sup>	1.31	1.43 <sup>AB</sup>
Hisex (White)		.26	.44	.66	.85	1.04 <sup>BC</sup>	1.18 <sup>BC</sup>	1.30	1.38 <sup>B</sup>
ISA (B300-A)		.27	.43	.65	.84	1.02 <sup>BC</sup>	1.14 <sup>C</sup>	1.28	1.40 <sup>B</sup>
ISA (B300-B)		.29	.44	.64	.84	1.01 <sup>C</sup>	1.15 <sup>C</sup>	1.28	1.40 <sup>B</sup>
Hyline (W-36)		.28	.43	.66	.85	1.04 <sup>BC</sup>	1.17 <sup>BC</sup>	1.26	1.37 <sup>B</sup>
H & N (Nick Chick)		.28	.46	.69	.86	1.10 <sup>A</sup>	1.23 <sup>A</sup>	1.35	1.49 <sup>A</sup>
Dekalb (Delta)		.29	.45	.67	.85	1.04 <sup>BC</sup>	1.15 <sup>BC</sup>	1.27	1.41 <sup>B</sup>
Dekalb (XL)		.29	.44	.66	.83	1.07 <sup>AB</sup>	1.17 <sup>BC</sup>	1.33	1.41 <sup>B</sup>
Average		.28	.45	.66	.85	1.05	1.17	1.30	1.41

<sup>ABC</sup>Different letters denote significant differences within column (P<.01).

Table 4. Feed Consumption of White Egg Entries in Open Housing,  
30th NCLP & MT

Breeder	------(Week of Age)-----								
	1-4	5-6	7-8	9-10	11-12	13-14	15-16	11-18	1-18
------(kg per bird)-----									
Shaver (SC288A)	.58	.64 <sup>A</sup>	.71 <sup>AB</sup>	.78 <sup>BC</sup>	.89 <sup>AB</sup>	.93	1.02 <sup>AB</sup>	.92 <sup>BC</sup>	6.47 <sup>A</sup>
Hisex (White)	.61	.61 <sup>AB</sup>	.71 <sup>AB</sup>	.83 <sup>A</sup>	.90 <sup>AB</sup>	.93	1.09 <sup>A</sup>	1.01 <sup>A</sup>	6.70 <sup>A</sup>
ISA (B300-A)	.57	.59 <sup>ABC</sup>	.69 <sup>BC</sup>	.79 <sup>ABC</sup>	.88 <sup>AB</sup>	.91	1.03 <sup>AB</sup>	.98 <sup>AB</sup>	6.43 <sup>A</sup>
ISA (B300-B)	.58	.54 <sup>C</sup>	.66 <sup>BC</sup>	.78 <sup>BC</sup>	.88 <sup>AB</sup>	.92	1.03 <sup>AB</sup>	.98 <sup>AB</sup>	6.36 <sup>AB</sup>
Hyline (W-36)	.56	.56 <sup>BC</sup>	.65 <sup>C</sup>	.75 <sup>C</sup>	.84 <sup>B</sup>	.89	1.00 <sup>B</sup>	.86 <sup>C</sup>	6.09 <sup>B</sup>
H & N (Nick Chick)	.57	.60 <sup>ABC</sup>	.74 <sup>A</sup>	.81 <sup>AB</sup>	.93 <sup>A</sup>	.97	1.09 <sup>A</sup>	.95 <sup>AB</sup>	6.64 <sup>A</sup>
Dekalb (Delta)	.58	.59 <sup>ABC</sup>	.66 <sup>BC</sup>	.78 <sup>BC</sup>	.91 <sup>A</sup>	.91	.99 <sup>B</sup>	.96 <sup>AB</sup>	6.37 <sup>AB</sup>
Dekalb (XL)	.59	.65 <sup>A</sup>	.71 <sup>AB</sup>	.81 <sup>AB</sup>	.92 <sup>A</sup>	.96	1.06 <sup>AB</sup>	.95 <sup>AB</sup>	6.64 <sup>A</sup>
Average	.58	.60	.69	.79	.89	.93	1.04	.95	6.46

<sup>ABC</sup>Different letters denote significant differences within column (P<.01).

Table 5. Feed Cost and Mortality of White Egg Entries in Open Housing,  
30th NCLP & MT

Breeder	Met.		Feed		Cost (8 - 126 d) (%)	Livability
	Protein (kg)	Energy (kcal)	Lysine (g)	TSAA (g)		
Shaver (SC288A)	1.14 <sup>A</sup>	19268 <sup>A</sup>	61.7 <sup>A</sup>	43.0 <sup>A</sup>	1.17 <sup>A</sup>	94.3
Hisex (White)	1.18 <sup>A</sup>	19881 <sup>A</sup>	63.7 <sup>A</sup>	44.4 <sup>A</sup>	1.21 <sup>A</sup>	91.7
ISA (B300-A)	1.14 <sup>A</sup>	19142 <sup>A</sup>	61.7 <sup>A</sup>	42.8 <sup>A</sup>	1.17 <sup>A</sup>	93.8
ISA (B300-B)	1.12 <sup>AB</sup>	18922 <sup>AB</sup>	61.0 <sup>AB</sup>	42.4 <sup>AB</sup>	1.15 <sup>AB</sup>	96.4
Hyline (W-36)	1.07 <sup>B</sup>	18145 <sup>B</sup>	58.2 <sup>B</sup>	40.5 <sup>B</sup>	1.10 <sup>B</sup>	96.4
H & N (Nick Chick)	1.17 <sup>A</sup>	19818 <sup>A</sup>	63.3 <sup>A</sup>	44.2 <sup>A</sup>	1.20 <sup>A</sup>	95.4
Dekalb (Delta)	1.12 <sup>AB</sup>	18951 <sup>AB</sup>	61.0 <sup>AB</sup>	42.4 <sup>AB</sup>	1.15 <sup>AB</sup>	93.9
Dekalb (XL)	1.17 <sup>A</sup>	19774 <sup>A</sup>	63.4 <sup>A</sup>	44.2 <sup>A</sup>	1.20 <sup>A</sup>	94.8
Average	1.14	19238	61.7	43.0	1.17	94.6

<sup>AB</sup>Different letters denote significant differences within columns (P<.01).

Table 6. Body Weight of White Egg Entries in Open Housing,  
30th NCLP & MT

	------(Weeks of Age)-----				Breeder	4	6	8	10
	12	14	16	18					
	------(kg)-----								
Shaver (SC288A)	.29 <sup>AB</sup>	.47	.67 <sup>AB</sup>	.83 <sup>AB</sup>	1.00	1.15 <sup>AB</sup>	1.26 <sup>B</sup>	1.41 <sup>AB</sup>	
Hisex (White)	.26 <sup>D</sup>	.45	.66 <sup>B</sup>	.81 <sup>AB</sup>	1.00	1.12 <sup>ABC</sup>	1.26 <sup>B</sup>	1.44 <sup>AB</sup>	
ISA (B300-A)	.27 <sup>CD</sup>	.46	.65 <sup>B</sup>	.79 <sup>B</sup>	.99	1.11 <sup>BC</sup>	1.26 <sup>B</sup>	1.44 <sup>AB</sup>	
ISA (B300-B)	.28 <sup>BCD</sup>	.46	.65 <sup>B</sup>	.79 <sup>B</sup>	.99	1.11 <sup>BC</sup>	1.25 <sup>BC</sup>	1.42 <sup>AB</sup>	
Hyline (W-36)	.28 <sup>BCD</sup>	.45	.64 <sup>B</sup>	.79 <sup>B</sup>	.99	1.11 <sup>BC</sup>	1.24 <sup>BC</sup>	1.35 <sup>B</sup>	
H & N (Nick Chick)	.27 <sup>BCD</sup>	.47	.71 <sup>A</sup>	.87 <sup>A</sup>	1.04	1.17 <sup>A</sup>	1.34 <sup>A</sup>	1.47 <sup>A</sup>	
Dekalb (Delta)	.28 <sup>ABC</sup>	.46	.67 <sup>AB</sup>	.79 <sup>B</sup>	.99	1.09 <sup>C</sup>	1.21 <sup>C</sup>	1.33 <sup>B</sup>	
Dekalb (XL)	.29 <sup>A</sup>	.48	.66 <sup>B</sup>	.84 <sup>AB</sup>	1.00	1.15 <sup>AB</sup>	1.27 <sup>B</sup>	1.39 <sup>B</sup>	
Average	.28	.46	.66	.81	1.00	1.13	1.26	1.41	

<sup>ABCD</sup>Different letters denote significant differences within column (P<.01).

Table 7. Feed Consumption of White Egg Entries in All Housing,  
30th NCLP & MT

Breeder	------(Week of Age)-----								
	1-4	5-6	7-8	9-10	11-12	13-14	15-16	11-18	1-18
------(kg per bird)-----									
Shaver (SC288A)	.59	.61 <sup>A</sup>	.70 <sup>ABC</sup>	.78 <sup>BCD</sup>	.90 <sup>A</sup>	.94 <sup>AB</sup>	1.01 <sup>AB</sup>	.92 <sup>B<sup>C</sup></sup>	6.45 <sup>AB</sup>
Hisex (White)	.60	.59 <sup>AB</sup>	.70 <sup>ABC</sup>	.82 <sup>A</sup>	.90 <sup>A</sup>	.94 <sup>AB</sup>	1.06 <sup>A</sup>	.99 <sup>A</sup>	6.61 <sup>AB</sup>
ISA (B300-A)	.58	.58 <sup>ABC</sup>	.68 <sup>BCD</sup>	.79 <sup>BC</sup>	.88 <sup>A</sup>	.92 <sup>BC</sup>	1.03 <sup>AB</sup>	.99 <sup>A</sup>	6.45 <sup>AB</sup>
ISA (B300-B)	.58	.53 <sup>C</sup>	.67 <sup>CD</sup>	.78 <sup>BCD</sup>	.88 <sup>A</sup>	.92 <sup>BC</sup>	1.03 <sup>AB</sup>	.98 <sup>AB</sup>	6.38 <sup>BC</sup>
Hyline (W-36)	.57	.55 <sup>BC</sup>	.65 <sup>D</sup>	.75 <sup>D</sup>	.82 <sup>B</sup>	.88 <sup>C</sup>	.97 <sup>B</sup>	.85 <sup>C</sup>	6.04 <sup>D</sup>
H & N (Nick Chick)	.58	.59 <sup>ABC</sup>	.72 <sup>A</sup>	.81 <sup>ABC</sup>	.92 <sup>A</sup>	.97 <sup>AB</sup>	1.06 <sup>A</sup>	.94 <sup>AB</sup>	6.58 <sup>AB</sup>
Dekalb (Delta)	.59	.58 <sup>ABC</sup>	.66 <sup>D</sup>	.77 <sup>CD</sup>	.89 <sup>A</sup>	.91 <sup>BC</sup>	.97 <sup>B</sup>	.94 <sup>AB</sup>	6.32 <sup>C</sup>
Dekalb (XL)	.61	.62 <sup>A</sup>	.71 <sup>AB</sup>	.81 <sup>AB</sup>	.92 <sup>A</sup>	.98 <sup>A</sup>	1.06 <sup>A</sup>	.98 <sup>AB</sup>	6.68 <sup>A</sup>
Average	.59	.58	.69	.79	.89	.93	1.02	.95	6.44

<sup>ABCD</sup>Different letters denote significant differences within column (P<.01).

Table 8. Feed Cost and Mortality of White Egg Entries in All Housing,  
30th NCLP & MT

Breeder	Met.		Feed		Cost (8 - 126 d) (%)	Livability
	Protein (kg)	Energy (kcal)	Lysine (g)	TSAA (g)		
Shaver (SC288A)	1.14 <sup>AB</sup>	19203 <sup>ABC</sup>	61.7 <sup>AB</sup>	42.9 <sup>ABC</sup>	1.17 <sup>ABC</sup>	95.1 <sup>ABC</sup>
Hisex (White)	1.16 <sup>AB</sup>	19650 <sup>AB</sup>	63.0 <sup>AB</sup>	43.9 <sup>AB</sup>	1.20 <sup>AB</sup>	92.8 <sup>C</sup>
ISA (B300-A)	1.14 <sup>AB</sup>	19190 <sup>ABC</sup>	62.0 <sup>AB</sup>	43.0 <sup>ABC</sup>	1.17 <sup>ABC</sup>	94.9 <sup>ABC</sup>
ISA (B300-B)	1.13 <sup>B</sup>	18977 <sup>BC</sup>	61.3 <sup>B</sup>	42.5 <sup>BC</sup>	1.16 <sup>BC</sup>	97.1 <sup>AB</sup>
Hyline (W-36)	1.06 <sup>C</sup>	17983 <sup>D</sup>	57.8 <sup>C</sup>	40.2 <sup>D</sup>	1.10 <sup>D</sup>	97.2 <sup>A</sup>
H & N (Nick Chick)	1.16 <sup>AB</sup>	19628 <sup>AB</sup>	62.9 <sup>AB</sup>	43.9 <sup>AB</sup>	1.19 <sup>AB</sup>	95.6 <sup>ABC</sup>
Dekalb (Delta)	1.12 <sup>B</sup>	18800 <sup>C</sup>	60.6 <sup>B</sup>	42.0 <sup>C</sup>	1.15 <sup>C</sup>	94.9 <sup>BC</sup>
Dekalb (XL)	1.18 <sup>A</sup>	19879 <sup>A</sup>	64.0 <sup>A</sup>	44.5 <sup>A</sup>	1.21 <sup>A</sup>	94.2 <sup>BC</sup>
Average	1.14	19164	61.7	42.8	1.17	95.2

<sup>ABC</sup>Different letters denote significant differences within columns (P<.01).

Table 9. Body Weight of White Egg Entries in All Housing,  
30th NCLP & MT

	------(Weeks of Age)-----				Breeder	4	6	8	10
	12	14	16	18					
	------(kg)-----								
Shaver (SC288A)	.29 <sup>A</sup>	.47	.66 <sup>B</sup>	.84 <sup>AB</sup>	1.02	1.16 <sup>AB</sup>	1.28 <sup>B</sup>	1.42 <sup>AB</sup>	
Hisex (White)	.26 <sup>C</sup>	.45	.66 <sup>B</sup>	.82 <sup>AB</sup>	1.01	1.14 <sup>BC</sup>	1.27 <sup>B</sup>	1.42 <sup>B</sup>	
ISA (B300-A)	.27 <sup>BC</sup>	.45	.65 <sup>B</sup>	.80 <sup>B</sup>	1.00	1.12 <sup>BC</sup>	1.26 <sup>BC</sup>	1.43 <sup>AB</sup>	
ISA (B300-B)	.28 <sup>ABC</sup>	.45	.65 <sup>B</sup>	.80 <sup>B</sup>	1.00	1.12 <sup>BC</sup>	1.26 <sup>BC</sup>	1.41 <sup>B</sup>	
Hyline (W-36)	.28 <sup>ABC</sup>	.45	.65 <sup>B</sup>	.81 <sup>B</sup>	1.00	1.13 <sup>BC</sup>	1.24 <sup>BC</sup>	1.36 <sup>C</sup>	
H & N (Nick Chick)	.28 <sup>ABC</sup>	.46	.70 <sup>A</sup>	.87 <sup>A</sup>	1.05	1.19 <sup>A</sup>	1.34 <sup>A</sup>	1.47 <sup>A</sup>	
Dekalb (Delta)	.28 <sup>AB</sup>	.46	.67 <sup>B</sup>	.81 <sup>B</sup>	1.00	1.11 <sup>C</sup>	1.22 <sup>C</sup>	1.36 <sup>C</sup>	
Dekalb (XL)	.29 <sup>A</sup>	.47	.66 <sup>B</sup>	.84 <sup>AB</sup>	1.02	1.16 <sup>AB</sup>	1.29 <sup>B</sup>	1.40 <sup>BC</sup>	
Average	.28	.46	.66	.82	1.01	1.14	1.27	1.41	

<sup>ABC</sup>Different letters denote significant differences within column (P<.01)

Table 10. Feed Consumption of Brown Egg Entries in Closed Housing, 30th NCLP & MT

Breeder	------(Week of Age)-----								
	1-4	5-6	7-8	9-10	11-12	13-14	15-16	11-18	1-18
------(kg per bird)-----									
Hisex (Brown)	.55	.57 <sup>AB</sup>	.79	.90	1.04	1.08	1.07	.94 <sup>B</sup>	6.94
ISA (Brown)	.56	.59 <sup>A</sup>	.78	.90	1.06	1.10	1.10	1.02 <sup>A</sup>	7.11
Hyline (Brown)	.56	.56 <sup>AB</sup>	.77	.88	1.01	1.07	1.09	.97 <sup>AB</sup>	6.91
H & N (Brown Nick)	.54	.54 <sup>B</sup>	.75	.87	1.00	1.09	1.13	1.02 <sup>A</sup>	6.94
Average	.55	.57	.77	.88	1.03	1.08	1.10	.99	6.97

<sup>AB</sup>Different letters denote significant differences within column (P<.01).

Table 11. Feed Cost and Mortality of Brown Egg Entries in Closed Housing, 30th NCLP & MT

Breeder	Met.		Feed		Cost (%)	Livability (8 - 126 d)
	Protein (kg)	Energy (kcal)	Lysine (g)	TSAA (g)		
------(per bird to 126 days)-----						
Hisex (Brown)	1.22	20639	66.2	46.1	1.26	99.1 <sup>A</sup>
ISA (Brown)	1.25	21165	68.1	47.3	1.29	95.8 <sup>B</sup>
Hyline (Brown)	1.22	20551	66.3	46.0	1.25	97.1 <sup>B</sup>
H & N (Brown Nick)	1.22	20642	66.2	46.1	1.26	95.5 <sup>B</sup>
Average	1.23	20749	66.7	46.4	1.26	96.9



<sup>AB</sup>Different letters denote significant differences within columns ( $P < .01$ ).

Table 12. Body Weight of Brown Egg Entries in Closed Housing,  
30th NCLP & MT

	------(Weeks of Age)-----				Breeder	4	6	8	10
	12	14	16	18					
	------(kg)-----								
Hisex (Brown)		.32	.51	.82	1.07	1.30	1.49	1.64	1.75
ISA (Brown)		.30	.49	.78	1.04	1.30	1.47	1.63	1.75
Hyline (Brown)		.31	.52	.80	1.05	1.33	1.47	1.64	1.82
H & N (Brown Nick)		.30	.48	.77	1.01	1.32	1.46	1.65	1.76
Average		.31	.50	.79	1.04	1.31	1.47	1.64	1.77

Table 13. Feed Consumption of Brown Egg Entries in Open Housing,  
30th NCLP & MT

Breeder	------(Week of Age)-----									
	1-4	5-6	7-8	9-10	11-12	13-14	15-16	11-18		1-18
	------(kg per bird)-----									
Hisex (Brown)		.52	.65	.86	.98	1.03 <sup>B</sup>	1.14	1.21	1.02 <sup>B</sup>	7.41
ISA (Brown)		.57	.57	.84	1.00	1.12 <sup>B</sup>	1.19	1.33	1.11 <sup>A</sup>	7.72
Hyline (Brown)		.53	.66	.84	.95	1.06 <sup>AB</sup>	1.15	1.22	1.04 <sup>B</sup>	7.46
H & N (Brown Nick)		.51	.61	.84	.98	1.07 <sup>AB</sup>	1.13	1.25	1.11 <sup>A</sup>	7.49
Average		.53	.63	.84	.98	1.07	1.15	1.25	1.06	7.51

<sup>AB</sup>Different letters denote significant differences within column (P<.01).

Table 14. Feed Cost and Mortality of Brown Egg Entries in Open Housing, 30th NCLP & MT

Breeder	Met.		Feed		Cost (8 - 126 d) (%)	Livability
	Protein (kg)	Energy (kcal)	Lysine (g)	TSAA (g)		
Hisex (Brown)	1.30	22058	70.3	49.3	1.34	97.7
ISA (Brown)	1.35	23007	72.9	51.2	1.39	95.4
Hyline (Brown)	1.31	22203	70.9	49.6	1.35	97.1
H & N (Brown Nick)	1.31	22304	71.2	49.8	1.35	94.0
Average	1.31	22393	71.3	49.9	1.35	96.1

Table 15. Body Weight of Brown Egg Entries in Open Housing, 30th NCLP & MT

Breeder	------(Weeks of Age)-----					4	6	8	10
	12	14	16	18	12				
Hisex (Brown)	.32 <sup>AB</sup>	.54	.87	1.08	1.29	1.46	1.65	1.83	
ISA (Brown)	.30 <sup>B</sup>	.55	.82	.99	1.29	1.48	1.67	1.85	
Hyline (Brown)	.32 <sup>A</sup>	.55	.82	1.08	1.31	1.50	1.67	1.81	
H & N (Brown Nick)	.30 <sup>B</sup>	.54	.82	1.08	1.29	1.48	1.65	1.88	
Average	.31	.54	.83	1.07	1.30	1.48	1.66	1.84	

<sup>AB</sup>Different letters denote significant differences within column (P<.01).

Table 16. Feed Consumption of Brown Egg Entries in All Housing,  
30th NCLP & MT

Breeder	------(Week of Age)-----									
	1-4	5-6	7-8	9-10	11-12	13-14	15-16	11-18	1-18	
------(kg per bird)-----										
Hisex (Brown)		.52	.63	.84	.96	1.03	1.12	1.17	1.00 <sup>C</sup>	7.29
ISA (Brown)		.57	.58	.82	.96	1.09	1.15	1.23	1.07 <sup>AB</sup>	7.47
Hyline (Brown)		.54	.64	.82	.93	1.05	1.13	1.19	1.02 <sup>BC</sup>	7.31
H & N (Brown Nick)		.51	.59	.81	.95	1.05	1.12	1.22	1.08 <sup>A</sup>	7.35
Average		.53	.61	.82	.95	1.05	1.13	1.20	1.04	7.34

<sup>ABC</sup>Different letters denote significant differences within column (P<.01).

Table 17. Feed Cost and Mortality of Brown Egg Entries in All Housing,  
30th NCLP & MT

Breeder	Met.		Feed		Cost (%)	Livability (8 - 126 d)
	Protein (kg)	Energy (kcal)	Lysine (g)	TSAA (g)		
------(per bird to 126 days)-----						
Hisex (Brown)		1.28	21685	69.2	48.4	99.1 <sup>A</sup>
ISA (Brown)		1.31	22240	70.9	49.6	95.6 <sup>AB</sup>
Hyline (Brown)		1.29	21768	69.7	48.7	97.1 <sup>AB</sup>
H & N (Brown Nick)		1.29	21866	69.9	48.9	94.4 <sup>B</sup>
Average		1.29	21890	69.8	48.8	96.4

<sup>AB</sup>Different letters denote significant differences within columns (P<.01).



Table 18. Body Weight of Brown Egg Entries in All Housing,  
30th NCLP & MT

	------(Weeks of Age)-----				Breeder	4	6	8	10
	12	14	16	18					
	------(kg)-----								
Hisex (Brown)		.32 <sup>AB</sup>	.53	.86 <sup>A</sup>	1.08	1.29	1.47	1.65	1.81
ISA (Brown)		.30 <sup>B</sup>	.52	.80 <sup>B</sup>	1.01	1.29	1.47	1.65	1.81
Hyline (Brown)		.32 <sup>A</sup>	.55	.82 <sup>AB</sup>	1.07	1.32	1.49	1.66	1.82
H & N (Brown Nick)		.30 <sup>B</sup>	.52	.81 <sup>B</sup>	1.06	1.30	1.48	1.65	1.85
Average		.31	.53	.82	1.06	1.30	1.48	1.66	1.82

<sup>AB</sup>Different letters denote significant differences within column (P<.01).

**Entries 30th NC LP & MT**  
Stock Suppliers and Categories

<u>Breeder</u>	<u>Stock</u>	<u>Category*</u>	<u>Source</u>
H & N International 3825 154th Ave.,N.E. Redmond, WA 98052	"Nick Chick"	I-A	Wheelock Hatchery 2170 Wayne Road Chambersburg, PA 17201
Hy-Line International P.O. Box 310 Dallas Center, IA 50063	W-36	I-A	Hy-Line International 4432 Highway 213, Box 309 Mansfield, GA 30255
ISA/Babcock P.O. Box 280 Ithaca, NY 14850-0280	B 300 A	I-A	Lititz Hatchery 631 W. Orange Street Lititz, PA 17543
	B 300 B	II-A	(Same)
Euribrid Inc. Hisex Division P.O. Box 719 Troutman, NC 28166	Hisex White	I-A	Clock & DeCloux Inc. 1609 Trumansburg Road Ithaca, NY 14850
Shaver Poultry Breeding Farms Ltd. P.O. Box 400 Cambridge, Ontario CANADA N1R5V9	Shaver White	I-A	America Selected Products Inc. 575 Copeland Mill Rd., Suite 1-8 Westerville, OH 43081
Dekalb Ag Research Inc. 3100 Sycamore Road Dekalb, IL 60115	Delta	I-C	Entrance of these strains were requested by the North Carolina Egg producers who secured the acquisition of the stock and appropriate fees.
	XL Link	I-C	Procedures followed were in accordance with North Carolina Layer Performance and Management Test.
H & N International 3825 154th Ave. N.E. Redmond, WA 98052	"Brown Nick"	I-A	Wheelock Hatchery 2170 Wayne Road Chambersburg, PA 17201
Hy-Line International P.O. Box 310 Dallas Center, IA 50063	Hy-Line Brown*	I-A	Hy-Line International 4432 Highway 213, Box 309 Mansfield, GA 30255
ISA/Babcock P.O. Box 280 Ithaca, NY 14850-0280	ISA Brown	I-A	America Selected Products Inc. 575 Copeland Mill Rd., Suite 1-8 Westerville, OH 43081

Euribrid Inc.  
Hisex Division  
P.O. Box 719  
Troutman, NC 28166

Hisex Brown I-A

Clock & DeCloux Inc.  
1609 Trumansburg Road  
Ithaca, NY 14850

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- \* I = Extensive distribution in southeast United States
- II = Little or no distribution in southeast United States
- A = Entry requested
- C = Entry not requested