

# PROTOCOL FOR 27th NORTH CAROLINA LAYER PERFORMANCE AND MANAGEMENT TEST

## Entries:

Ten entries were accepted in accordance with the rules and regulations of the test. Seven white egg and 3 brown egg strains were tested.

## Incubation and Hatching:

A minimum of 105 dozen hatching eggs per entry were set November 26, 1985 and hatched December 17, 1985. Chicks were professionally sexed. Pullet chicks were wing banded and vaccinated (as per schedule below) prior to placement in brooding cages.

## Pullet Housing and Feeding:

Those pullets which will lay in the light and air controlled house were reared in a light and air controlled facility. Those to lay in the curtain-sided houses were reared in a curtain-sided facility.

Cage space during the first 6 weeks was restricted to 14.4 sq. in. per bird and then expanded to the full allotted space of 40 sq. in. per bird in the light and air controlled house. Cage space in the open house was 40 sq. in. per bird from 1 through 140 days.

Pullet feeds are outlined below, starter was fed until 2.5 lbs. per bird was consumed; thereafter, grower was fed until 12 weeks of age. After twelve weeks of age birds within entry and facility combinations that were within body weight recommendations were fed developer. Beginning at 18 weeks and until 5% production, pre-layer was fed. Pullets were moved to laying facilities at 20 weeks of age.

## Pullet Diet Composition:

	<u>Starter</u>	<u>Grower</u>	<u>Developer</u>	<u>Pre-Layer</u>
Protein (%)	20.0	17.3	14.1	15.1
Met. Energy (kcal/16)	1251	1284	1272	1251
Calcium (%)	1.05	0.85	0.84	1.84
T. Phosphorus (%)	0.75	0.63	0.63	0.63
Lysine (%)	1.40	1.11	1.04	0.99
Total Sulfur A.A. (%)	0.67	0.62	0.56	0.63

Pullet Vaccination, Debeaking, and Light Schedule:

Age	<u>Vaccination-Debeaking</u>	Photoperiod (hr.)	
		<u>Closed Facility</u>	<u>Curtain-Sided Facility</u>
Day 1	Marek's disease vaccination	23	23
Day 3		9.5	15
1 Week	Precision debeaked		
1.5 Weeks	Newcastle & bronchitis vaccination via drinking water		
6 Weeks	Newcastle & bronchitis vaccination via aerosol spray		
10 Weeks	Fowl pox & Avian encephalomyelitis vaccination		
12 Weeks	Final debeaking Newcastle & bronchitis vaccination via aerosol spray		
18 Weeks		12.5	
19 Weeks		14.5	15.5
20 Weeks		16	16

## DESCRIPTION OF DATA TABLE STATISTICS

### Breeder (Strain):

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

### Protein per Bird to 140 Days:

Calculated cumulative protein intake per bird to 140 days.

### Metabolizable Energy per Bird to 140 Days:

Calculated cumulative metabolizable energy intake per bird to 140 days.

### Feed Cost per Bird to 140 Days:

Calculated feed cost per bird to 140 days. Using three-year average regional feed prices.

### Age at 50% Production:

The age of the pullets on the first of two consecutive days at or above 50% hen-day egg production.

### Mortality 11-140 Days:

The percentage of the birds housed which died during days 11-140. Accidental deaths and males removed are excluded.

### Body Weights (6, 8, 10, . . . 20 Weeks):

Bi-weekly average body weights of all birds within representative cages. Sample size per strain was 72 birds in closed housing and 144 birds in open housing, resulting in an equal percentage of the birds being sampled within each growing facility.

### Feed Consumption (1-6, 7-8, . . . 19-20, 1-20):

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.

TABLE 1. PERFORMANCE OF ENTRIES IN ALL HOUSING, 27th NCLPMT.

Breeder (Strain)	Protein -----Per Bird to 140 (kg)	Met. Energy (kcal)	Feed Cost days----- (\$)	Age at 50% Prod. (d)	Mortality (11-140 d) (%)
<b>White Egg Pullets</b>					
Hisex (White)	1.34	21970	1.41	149.3	5.2
Colonial (365-S)	1.14	19480	1.23	156.6	2.2
ISA/Babcock (B300)	1.16	19495	1.25	150.5	1.5
Hyline (W-36)	1.18	20335	1.29	158.8	2.2
Shaver (288-A)	1.24	21435	1.36	157.8	0.8
Dekalb (XL-Link)	1.12	19255	1.23	156.3	1.8
H & N (Nick Chick)	1.15	19825	1.26	159.0	0.2
<b>White Egg Average</b>	<b>1.19</b>	<b>20250</b>	<b>1.29</b>	<b>155.5</b>	<b>2.0</b>
<b>Brown Egg Pullets</b>					
Hubbard (Golden Comet)	1.32	22980	1.46	156.3	1.4
Dekalb (Sex-Sal-Link)	1.30	22640	1.44	170.9	0.6
Hisex (Brown)	1.32	22850	1.45	154.5	2.4
<b>Brown Egg Average</b>	<b>1.31</b>	<b>22820</b>	<b>1.45</b>	<b>160.6</b>	<b>1.5</b>

TABLE 2. BODY WEIGHT OF ENTRIES IN ALL HOUSING, 27th NCLPMT.

Breeder (Strain)	-----(Weeks of Age)-----							
	6	8	10	12	14	16	18	20
	----- (lbs.) -----							
<b>White Egg Pullets</b>								
Hisex (White)	0.88	1.27	1.65	1.98	2.14	2.43	2.78	3.10
Colonial (365-S)	0.80	1.12	1.43	1.68	1.75	2.05	2.35	2.58
ISA/Babcock (B300)	0.88	1.28	1.63	1.97	2.09	2.43	2.69	3.04
Hyline (W-36)	0.89	1.29	1.65	2.02	2.20	2.51	2.71	2.96
Shaver (288-A)	0.92	1.35	1.71	2.13	2.16	2.57	2.83	3.05
Dekalb (XL-Link)	0.88	1.28	1.66	2.05	2.12	2.48	2.60	3.06
H & N (Nick Chick)	0.92	1.32	1.67	2.06	2.15	2.49	2.70	3.01
<b>White Egg Average</b>	<b>0.88</b>	<b>1.27</b>	<b>1.63</b>	<b>1.98</b>	<b>2.09</b>	<b>2.42</b>	<b>2.67</b>	<b>2.97</b>
<b>Brown Egg Pullets</b>								
Hubbard (Golden Comet)	1.08	1.52	2.01	2.53	2.63	3.08	3.32	3.79
Dekalb (Sex-Sal-Link)	1.02	1.56	1.96	2.53	2.73	3.12	3.43	3.64
Hisex (Brown)	1.05	1.54	2.10	2.57	2.76	3.12	3.40	3.82
<b>Brown Egg Average</b>	<b>1.05</b>	<b>1.54</b>	<b>2.02</b>	<b>2.55</b>	<b>2.71</b>	<b>3.11</b>	<b>3.38</b>	<b>3.75</b>



AGRICULTURAL  
EXTENSION  
SERVICE

North Carolina State University  
School of Agriculture and Life Sciences

Office of Extension Poultry Science  
Box 7608  
Raleigh, N.C. 27695-7608  
(919) 737-2621

**TWENTY-SEVENTH**  
**NORTH CAROLINA LAYER PERFORMANCE**  
**AND MANAGEMENT TEST**  
**Growing Report**

**Vol. 1, No. 1**  
**August 1987**

The North Carolina Layer Performance and Management Test is conducted under the auspices of the Agricultural Extension Service at North Carolina State University and the North Carolina Department of Agriculture. The flock is maintained at the Piedmont Research Station, Salisbury, North Carolina. Mr. Billy Ayscue is Piedmont Research Station Superintendent; Mr. Joe Hampton, is Resident Manager of the flock; and Dr. J. B. Carey is Project Leader. The purpose of this program is to assist poultrymen in evaluation of stocks of commercial layers and management systems.

**For further information contact:**

Dr. John B. Carey  
Poultry Science Department  
North Carolina State University  
Box 7608  
Raleigh, NC 27695-7608

TABLE 3. FEED CONSUMPTION OF ENTRIES IN ALL HOUSING, 27th NCLPMT.

Breeder (Strain)	------(weeks of age)-----								
	1-6	7-8	9-10	11-12	13-14	15-16	17-18	19-20	1-20
	(lbs. per bird)								
<b>White Egg Pullets</b>									
Hisex (White)	2.4	1.6	1.9	2.3	2.0	2.2	2.1	2.3	16.7
Colonial (365-S)	2.3	1.4	1.8	1.9	1.3	1.8	1.8	1.8	14.3
ISA/Babcock (B300)	1.9	1.4	1.8	1.9	1.5	2.0	2.0	2.3	14.9
Hyline (W-36)	2.3	1.6	1.7	2.3	1.5	2.1	2.1	2.2	15.8
Shaver (288-A)	2.3	1.6	1.9	2.2	1.7	2.2	2.3	2.3	16.5
Dekalb (XL-Link)	2.1	1.5	1.7	2.0	1.5	1.8	1.8	2.3	14.8
H & N (Nick Chick)	2.3	1.5	1.7	2.1	1.8	2.1	1.9	2.1	15.4
<b>White Egg Average</b>	<b>2.2</b>	<b>1.5</b>	<b>1.8</b>	<b>2.1</b>	<b>1.6</b>	<b>2.0</b>	<b>2.0</b>	<b>2.2</b>	<b>15.5</b>
<b>Brown Egg Pullets</b>									
Hubbard (Golden Comet)	2.2	1.6	1.8	2.5	1.9	2.4	2.1	2.6	17.1
Dekalb (Sex-Sal-Link)	2.1	1.7	2.1	2.4	1.9	2.4	2.2	2.6	17.4
Hisex (Brown)	2.5	1.7	2.0	2.0	1.8	2.2	2.1	2.6	17.0
<b>Brown Egg Average</b>	<b>2.3</b>	<b>1.7</b>	<b>2.0</b>	<b>2.3</b>	<b>1.9</b>	<b>2.3</b>	<b>2.1</b>	<b>2.6</b>	<b>17.2</b>

TABLE 4. PERFORMANCE OF ENTRIES IN CLOSED HOUSING, 27th NCLPMT.

Breeder (Strain)	Protein -----Per Bird (kg)	Met. Energy to 140 (kcal)	Feed Cost days----- (\$)	Age at 50% Prod. (d)	Mortality (11-140 d) (%)
<b>White Egg Pullets</b>					
Hisex (White)	1.46	24110	1.54	146.0	6.8
Colonial (365-S)	1.19	20060	1.27	153.7	0.0
ISA/Babcock (B300)	1.15	19270	1.23	151.0	0.0
Hyline (W-36)	1.24	21190	1.34	159.0	0.0
Shaver (288-A)	1.34	22880	1.45	154.2	0.0
Dekalb (XL-Link)	1.07	18330	1.17	156.0	0.9
H & N (Nick Chick)	1.17	19920	1.27	156.0	0.0
<b>White Egg Average</b>	<b>1.23</b>	<b>20820</b>	<b>1.32</b>	<b>153.7</b>	<b>1.1</b>
<b>Brown Egg Pullets</b>					
Hubbard (Golden Comet)	1.34	22910	1.46	156.7	0.0
Dekalb (Sex-Sal-Link)	1.29	22330	1.42	160.0	0.0
Hisex (Brown)	1.28	22000	1.40	155.5	0.0
<b>Brown Egg Average</b>	<b>1.30</b>	<b>22410</b>	<b>1.43</b>	<b>157.4</b>	<b>0.0</b>

TABLE 5. BODY WEIGHT OF ENTRIES IN CLOSED HOUSING, 27th NCLPMT.

Breeder (Strain)	-----(Weeks of Age)-----							
	6	8	10	12	14	16	18	20
	----- (lbs.) -----							
<b>White Egg Pullets</b>								
Hisex (White)	0.86	1.22	1.60	1.90	1.99	2.33	2.64	3.05
Colonial (365-S)	0.79	1.09	1.39	1.61	1.66	2.00	2.25	2.53
ISA/Babcock (B300)	0.85	1.23	1.55	1.86	1.96	2.31	2.51	3.03
Hyline (W-36)	0.88	1.27	1.60	1.99	2.18	2.43	2.64	2.97
Shaver (288-A)	0.90	1.33	1.65	2.12	2.03	2.54	2.75	3.07
Dekalb (XL-Link)	0.83	1.24	1.61	2.05	2.02	2.43	2.54	3.12
H & N (Nick Chick)	0.89	1.28	1.59	1.99	1.97	2.34	2.59	2.98
<b>White Egg Average</b>	<b>0.86</b>	<b>1.24</b>	<b>1.57</b>	<b>1.93</b>	<b>1.97</b>	<b>2.34</b>	<b>2.56</b>	<b>2.96</b>
<b>Brown Egg Pullets</b>								
Hubbard (Golden Comet)	1.08	1.52	1.89	2.42	2.38	2.86	3.24	3.65
Dekalb (Sex-Sal-Link)	0.99	1.49	1.99	2.44	2.50	2.98	3.34	3.65
Hisex (Brown)	1.01	1.54	1.90	2.40	2.53	2.86	3.20	3.70
<b>Brown Egg Average</b>	<b>1.03</b>	<b>1.52</b>	<b>1.93</b>	<b>2.42</b>	<b>2.47</b>	<b>2.90</b>	<b>3.26</b>	<b>3.67</b>

TABLE 6. FEED CONSUMPTION OF ENTRIES IN CLOSED HOUSING, 27th NCLPMT.

Breeder (Strain)	-----(weeks of age)-----								
	1-6	7-8	9-10	11-12	13-14	15-16	17-18	19-20	1-20
	(lbs. per bird)								
<b>White Egg Pullets</b>									
Hisex (White)	2.6	1.5	2.1	2.7	2.3	2.2	2.1	2.3	17.8
Colonial (365-S)	2.4	1.4	2.1	2.2	1.3	1.8	1.9	1.6	14.7
ISA/Babcock (B300)	1.9	1.3	1.7	2.0	1.5	2.0	1.8	2.4	14.6
Hyline (W-36)	2.4	1.6	1.7	2.4	1.5	2.2	2.2	2.3	16.3
Shaver (288-A)	2.3	1.6	2.0	2.4	1.8	2.2	2.4	2.4	17.1
Dekalb (XL-Link)	2.0	1.5	1.6	2.1	1.3	1.7	1.7	2.3	14.2
H & N (Nick Chick)	2.4	1.4	1.6	2.1	1.8	1.8	1.7	2.2	15.0
<b>White Egg Average</b>	<b>2.3</b>	<b>1.5</b>	<b>1.8</b>	<b>2.3</b>	<b>1.6</b>	<b>2.0</b>	<b>2.0</b>	<b>2.2</b>	<b>15.7</b>
<b>Brown Egg Pullets</b>									
Hubbard (Golden Comet)	2.2	1.6	1.6	2.7	1.9	2.1	2.5	2.1	16.7
Dekalb (Sex-Sal-Link)	1.9	1.7	2.1	2.3	1.7	2.4	2.2	2.6	16.9
Hisex (Brown)	2.6	1.8	1.9	2.2	1.6	2.2	2.2	2.4	16.9
<b>Brown Egg Average</b>	<b>2.2</b>	<b>1.7</b>	<b>1.9</b>	<b>2.4</b>	<b>1.7</b>	<b>2.2</b>	<b>2.3</b>	<b>2.4</b>	<b>16.8</b>

TABLE 7. PERFORMANCE OF ENTRIES IN OPEN HOUSING, 27th NCLPMT.

Breeder (Strain)	Protein -----Per (kg)	Met. Energy Bird to 140 (kcal)	Feed Cost days----- (\$)	Age at 50% Prod. (d)	Mortality (11-140 d) (%)
<b>White Egg Pullets</b>					
Hisex (White)	1.22	19830	1.29	152.7	3.5
Colonial (365-S)	1.09	18900	1.20	159.5	2.3
ISA/Babcock (B300)	1.18	19720	1.27	150.0	2.9
Hyline (W-36)	1.13	19480	1.24	158.7	4.4
Shaver (288-A)	1.15	19990	1.27	161.4	1.7
Dekalb (XL-Link)	1.17	20180	1.29	156.6	2.8
H & N (Nick Chick)	1.14	19730	1.26	162.0	0.5
<b>White Egg Average</b>	<b>1.15</b>	<b>19690</b>	<b>1.26</b>	<b>157.3</b>	<b>2.6</b>
<b>Brown Egg Pullets</b>					
Hubbard (Golden Comet)	1.31	23050	1.47	155.9	2.8
Dekalb (Sex-Sal-Link)	1.31	22950	1.46	181.9	1.2
Hisex (Brown)	1.36	23700	1.51	153.5	4.8
<b>Brown Egg Average</b>	<b>1.33</b>	<b>23230</b>	<b>1.48</b>	<b>163.8</b>	<b>2.9</b>

TABLE 8. BODY WEIGHT OF ENTRIES IN OPEN HOUSING, 27th NCLPMT.

Breeder (Strain)	-----(Weeks of Age)-----							
	6	8	10	12	14	16	18	20
	----- (lbs.) -----							
<b>White Egg Pullets</b>								
Hisex (White)	0.90	1.32	1.71	2.07	2.29	2.54	2.92	3.15
Colonial (365-S)	0.82	1.15	1.47	1.76	1.84	2.11	2.45	2.60
ISA/Babcock (B300)	0.92	1.33	1.71	2.08	2.23	2.56	2.88	3.05
Hyline (W-36)	0.91	1.31	1.70	2.06	2.23	2.59	2.79	2.96
Shaver (288-A)	0.94	1.37	1.77	2.14	2.30	2.60	2.91	3.03
Dekalb (XL-Link)	0.94	1.33	1.72	2.05	2.22	2.53	2.67	3.01
H & N (Nick Chick)	0.96	1.37	1.75	2.13	2.34	2.65	2.82	3.04
<b>White Egg Average</b>	<b>0.91</b>	<b>1.31</b>	<b>1.69</b>	<b>2.04</b>	<b>2.21</b>	<b>2.51</b>	<b>2.78</b>	<b>2.98</b>
<b>Brown Egg Pullets</b>								
Hubbard (Golden Comet)	1.09	1.53	2.14	2.65	2.89	3.30	3.41	3.94
Dekalb (Sex-Sal-Link)	1.05	1.64	1.93	2.63	2.96	3.27	3.52	3.64
Hisex (Brown)	1.09	1.54	2.30	2.75	2.99	3.39	3.61	3.94
<b>Brown Egg Average</b>	<b>1.08</b>	<b>1.57</b>	<b>2.12</b>	<b>2.68</b>	<b>2.95</b>	<b>3.32</b>	<b>3.51</b>	<b>3.84</b>

TABLE 9. FEED CONSUMPTION OF ENTRIES IN OPEN HOUSING, 27th NCLPMT.

Breeder (Strain)	-----(weeks of age)-----								
	1-6	7-8	9-10	11-12	13-14	15-16	17-18	19-20	1-20
	(lbs. per bird)								
<b>White Egg Pullets</b>									
Hisex (White)	2.3	1.6	1.6	1.9	1.7	2.1	2.1	2.4	15.7
Colonial (365-S)	2.2	1.5	1.6	1.7	1.3	1.9	1.8	2.0	14.0
ISA/Babcock (B300)	2.1	1.5	1.8	1.8	1.5	2.0	2.1	2.2	15.0
Hyline (W-36)	2.2	1.6	1.7	2.3	1.5	2.0	2.0	2.1	15.4
Shaver (288-A)	2.3	1.6	1.7	2.0	1.7	2.1	2.1	2.2	15.7
Dekalb (XL-Link)	2.1	1.6	1.9	2.0	1.6	1.9	2.0	2.3	15.4
H & N (Nick Chick)	2.3	1.6	1.7	2.0	1.7	2.4	2.0	2.0	15.7
<b>White Egg Average</b>	<b>2.2</b>	<b>1.6</b>	<b>1.7</b>	<b>2.0</b>	<b>1.6</b>	<b>2.1</b>	<b>2.0</b>	<b>2.2</b>	<b>15.3</b>
<b>Brown Egg Pullets</b>									
Hubbard (Golden Comet)	2.3	1.6	2.0	2.3	2.0	2.6	1.7	3.1	17.6
Dekalb (Sex-Sal-Link)	2.3	1.8	2.1	2.4	2.1	2.4	2.1	2.6	17.8
Hisex (Brown)	2.3	1.6	2.2	1.9	2.0	2.3	2.0	2.7	17.0
<b>Brown Egg Average</b>	<b>2.3</b>	<b>1.7</b>	<b>2.1</b>	<b>2.2</b>	<b>2.0</b>	<b>2.4</b>	<b>1.9</b>	<b>2.8</b>	<b>17.5</b>

STOCK SUPPLIERS AND CATEGORIES

<u>Breeder</u>	<u>Stock</u>	<u>Category*</u>	<u>Source</u>
Hisex Division Pilch, Inc. Box 438 Troutman, NC 28166	Hisex White	I-A YES	Pilch, Inc. Box 438 Troutman, NC 28166
Colonial Poultry Farms, Inc., Pleasant Hill, MO 64080	Colonial True-Line 365-S	II YES	Colonial Poultry Farms, Inc. Pleasant Hill, MO 64080
ISA-Babcock, Inc. P.O. Box 280 Ithaca, NY 14851	ISA-Babcock B300	I-A	Tri-State Hatcheries 229 Main Street N. Brookfield, MA 0153
HyLine International Johnston, IA 50131	HyLine W-36	I-C	Not applicable
Shaver Poultry Breeding Farms, Ltd., Box 400 Ontario, CANADA N1R 5V9	Shaver Starcross 288-A	I-A YES	Merrill Poultry Farms, Inc., Route 2, Box 21 Paul, ID 83347
DeKalb AgResearch, Inc. 3100 Sycamore Road DeKalb, IL 60115	DeKalb XL-Link	I-A YES	Clay's Hatchery Route 1 Blackstone, VA 23824
H & N, Inc. 15305 N.E. 40th Street Redmond, WA 98052	H & N "Nick Chick"	I-A YES	Tatum Farms Route 3 Dawsonville, GA 30534
Hubbard Farms Walpole, NH 03608	Hubbard Golden Comet	I-A YES	Bowers Brothers Hatchery Route 4 Albemarle, NC 28001
DeKalb AgResearch, Inc. 3100 Sycamore Road DeKalb, IL 60115	DeKalb Sex-Sal-Link "G"	I-A YES	Pee Dee Hatchery P.O. Box 156 Hartsville, SC 29550
Hisex Division Pilch, Inc. Box 438 Troutman, NC 28166	Hisex Brown	I-A YES	Pilch, Inc. Box 438 Troutman, NC 28166

- \*I = Extensive distribution in southeast United States.
- II = Little or no distribution in southeast United States.
- A = Entry requested.
- C = Entry neither requested nor supported.
- YES = Supporting and fully cooperating with test.