



AGRICULTURAL
EXTENSION
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I am enclosing the final summary of the Twenty-Third North Carolina Random Sample Laying Test which you have requested. We believe that the information contained herein is a useful guide in evaluating egg production stocks and management systems. Additional useful data on most of these stocks are published in reports of other laying tests in New Hampshire and Ontario, Canada. Please circulate this report among your associates in order that maximum use of it may be made. If additional copies are needed they may be obtained from the address below.

The North Carolina test continues its policy of acquiring those commercial stocks experiencing major distribution in this area. YES under category indicates full cooperation and financial support of the entry. Category I-A stocks were voluntarily entered by the breeder or distributor. Category II commercial stocks lack major distribution in North Carolina and are tested at the request of the breeder. Full entry information is tabulated in this report.

This is the first flock that was placed in the curtain-side, well-insulated, brood-grow house at 1 day of age. Design deficiencies of lighting on water and heat control caused higher than normal first week mortality. All entries experienced such mortality and averaged 3.6% more than the sister flock in the closed house. During the laying period this flock experienced two occurrences of severe enteritis that were apparently feed associated and caused cage fatigue especially in the closed house where excessive mortality reached 3 or 4%. Variability was increased enough to widen the Duncan Test significance bands for entries by about 0.6 eggs per bird housed, 0.2% rate of lay after 50%, 0.01 lbs. of feed per lb. of eggs, and 2.7 days lost to mortality.

ERRATA. Some errors have been detected in the progress reports for this test. In the 231 day report, the number eggs laid prior to 147 days were subtracted from total eggs, eggs after housing, and eggs after 50% production. This caused eggs per bird to be reported an average of 0.4 low with only entry #11 exceeding an egg per bird error. Rate of lay was reported an average of 0.6% low. This error was not corrected until the final report. In the 315 day report Table 23-2B line 20, feed per dozen eggs should be 3.28 not 2.39. In the 399 day report some mortality that occurred after 399 days was included. Consequently correct % mortality in Table 23-3A lines 2S and 7D are 13.6 and 17.5%, in Table 23-3B line 10S is 6.8%, in Table 23-3C line 8D is 3.3%, and in Table 23-3D lines 2, 7, 8, and 10 are 9.8, 12.4, 5.5, and 8.5%, respectively. In Table 23-3A line 0D feed per 100 bird days is 22.2. Table 23-3B line 1S eggs per bird housed is 201.4 not 184.6.

All space not required for the laying test was utilized for research on stress physiology, growing cage space, beak trimming, and layer feed energy. We express our appreciation to Shaver Poultry Breeding Farms, Ltd., H & N, Inc., DeKalb AgResearch, Inc., Babcock Poultry Farm, Inc., their distributors, and other helpful individuals for providing extra hatching eggs for the research which will be reported elsewhere.

Requests for reports from this test should be sent to Mr. T. R. Burleson, Jr.,
PIEDMONT RESEARCH STATION, ROUTE 6, BOX 420, SALISBURY, NC 28144.

Very truly yours,

Grady A Martin

Grady A. Martin
Extension Poultry Specialist

FINAL SUMMARY REPORT
TWENTY-THIRD NORTH CAROLINA RANDOM SAMPLE LAYING TEST
April 1, 1981 through August 10, 1982

The North Carolina Random Sample Laying Tests are conducted under the auspices of the Agricultural Extension Service of North Carolina State University and the Division of Research Stations of the North Carolina Department of Agriculture. Mr. T. R. Burleson, Jr., Route 6, Box 420, Salisbury, NC 28144, is Resident Manager of the tests and Dr. G. A. Martin, Department of Poultry Science, North Carolina State University, P. O. Box 5307, Raleigh, NC 27650, is Project Leader. Mr. B. N. Ayscue is Superintendant of the Piedmont Research Station near Salisbury, NC on which the flock is maintained. The purpose of the project is to assist commercial poultrymen in evaluating laying stocks and management systems for them. A committee representing various poultry interests in the state advises the Steering Committee in establishing policies and practices which best serve this purpose.

FLOCK AND MANAGEMENT INFORMATION

The flock was composed of 9 white-egg and 3 brown-egg strains of commercial layers. Samples of 1260 fresh hatching eggs from selected supply flocks of cooperating breeders or distributors were shipped to the test site where all eggs were incubated. When available, 456 sexed pullet chicks were banded with 152 placed in the LAC (light and air controlled) house and 304 were placed in the CS (curtain-side) house to be grown in cages at approximately 50 sq. in. per bird (30.7 birds/M²). All birds were vaccinated at day-old for Marek's with cell associated live turkey herpes virus vaccine. We express our appreciation to Mr. Ben Rood, Keenum, Inc., P. O. Box 1706, Anniston, AL for providing the vaccine and to Mr. Mike Williams in the Department of Poultry Science at NCSU for supervising its storage and administration.

Precision beak trimming of all pullets at 1-week of age, with touch up at 12 weeks of age if needed, was applied. All pullets were vaccinated for Newcastle at seven days (B1), four weeks (La Sota) and 16 weeks (La Sota) and for bronchitis at seven days and 16 weeks via water; vaccinated for pox via wing web at 12 weeks; and vaccinated for AE at 14 weeks of age. The flock was M.G. negative. All mash rations described by sample specifications in Table 23-F were purchased on contract from a commercial feed manufacturer and fed ad lib. Approximately 2.25 lbs. per bird of starter was followed by biweekly assignment to grower 1 or grower 2, depending upon adherence to breeder's growth charts. Lighting was held at 9 hours per day in the LAC-Gro. house and at day length for June 21 followed by natural day length in the CS-Gro. house until 19 weeks when step-up lighting began.

At 21-weeks of age, 420 pullets (when available) were placed in a factorial design in 3 houses, 12 inch X 18 inch and 18 inch X 12 inch cages (45.7 X 30.5 cm), and 3 and 4 birds per cage. Birds from the LAC-Gro house were placed in a LAC laying house and birds from the CS-Gro house were divided between a curtain-side high-rise (Hi-R) laying house and a curtain-side flush-waste (FW) laying house. Feed consumption and egg production rates were determined bi-weekly by house and strain and feed assigned from the layer rations in table 23-F to provide a minimum TSAA of .70 g. for brown-egg and .65 g. for white-egg strains daily to 40 weeks or less than 88% production, .65 g. and .60 g. to 75% production, and .60 g. and .58 g. below 75% production in general with exceptions as bird condition warranted.

DATA TABLES

We express our appreciation to Mr. Jim Arneson, Manager of the FCX egg processing plant at Charlotte, for providing a grading service by entry and making Part V of the tables possible; to the staff of the NCDA Autopsy Lab at Monroe for providing necropsy reports which made Part IV of the tables possible; to Mr. Edgar Ingram of the NCDA Egg Inspection Service for providing official candled egg quality data; and to the members of the Piedmont Station and Poultry Department staffs who worked diligently under adverse conditions to keep this project viable.

Performance data are reported in tables which have a 3-part designation system. The first part (23) is the test number. The second part indicates the quarter of the laying year through which data is accumulated and layer housing type of the birds reported - - A = LAC house, B = Hi-R house, C = FW house, D = average of all 3 houses, and F = feed specifications. The third part has Roman numerals to indicate data items included (e.g. III is egg quality data) and letters to designate the type of comparison in the table - - - C = cage type, S = cage space allowance, G = growing data, and letter absent compares entry averages only. These data are for one year at one location. Comparisons of some of the stocks may be available at Durham, New Hampshire and Ottawa, Ontario, CANADA.

RESULTS Part I of Tables

Entry No. is assigned at random to the particular entry, with 0 = average of entries.

Type Cage: S = shallow (18" wide X 12" deep), D = deep (12" wide X 18" deep), 3 = three birds per cage, 4 = 4 birds per cage, and 0 = average across treatments.

Breeder is the name used to distinguish entries. Full information about the stock and source is listed elsewhere in this report.

Average Body Weight is reported in pounds at housing and at end of test.

Egg Size, Distribution (%) was obtained by crediting the weekly total up to 33 weeks and the bi-weekly thereafter to size classes proportional to those observed on the total production of one day. These weekly and bi-weekly values were totaled and converted to percentages. Individual eggs weighing 24 but less than 27 ounces per dozen (between 56.75 and 63.8 g.) are classified as large; other sizes are scaled up or down from large in blocks of 3 oz. per doz.

Average Egg Weight was obtained by crediting all eggs for each time period as above at the average size observed on one day by mass weight.

Age at 50% Production was the age of pullets on the first day of the first two consecutive days on which production reached or exceeded 50%.

Hen-Day Production Percentages represent the daily average number of eggs produced per 100 hens of the entry during the specified periods.

Eggs Per Pullet housed is the total number of eggs produced divided by the number of pullets housed.

Part II of Tables

Entry No. and Cage Type, are the same as above.

No. of Birds are the net pullets or hens retained at the specified times. Sexing errors, first week mortality, and accidental deaths are excluded.

Mortality is the percentage of birds that died during growing and laying periods and the average days per bird housed that were lost to mortality during the laying period.

Feed Consumed is average pounds of feed consumed for the 147 days in the growing period, per 100 birds per day in laying period, per pound of eggs produced in laying period, and per dozen eggs laid.

Chick Cost charges the average of prices quoted for all stocks in the test in April 1981 for each net pullet at 1 week and divided the total among survivors at housing.

Values Per Pullet Housed. Weekly averages of Raleigh egg prices quoted by the Federal-State Market Service were adjusted to farm price and averaged over three years. Fowl prices in North Carolina for the week in which the test terminated were averaged over three years. Monthly feed prices quoted by the NCDA were averaged over three years and assumed to represent a 16% protein, 1305 Kcal./lb. feed. Prices of other feeds were adjusted up or down by an amount equal to the difference in ingredient prices at the middle of each quarter of the current year.

IOFCC is income over laying feed cost and growing chick and feed cost per pullet housed. This does not represent net return since many other costs are involved in egg production.

Part III of Tables

Entry No. and Cage Type are the same as above.

% Loss (Downgrades) was the percentage by which total egg value was reduced below Grade A value due to downgrades detected by candling. We express our appreciation to the personnel of the North Carolina Department of Agriculture who provided candling service on one day of production each month. Market values of all eggs were calculated on the basis of these candling reports, with no discount for stained or dirty eggs, since the eggs were graded unwashed.

% Inclusion (Break-Out): Blood spots and colored meat spots were observed by breaking two day's production from each lot each quarter of the year. Spots exceeding 1/8 inch were classified as large and those of lesser size as small. Break-out data were not used for egg value calculations.

Candled Quality Percentages: Official egg graders from the North Carolina Department of Agriculture candled the production of one day each month. The percentages reported are a summary of their findings and were used to determine egg value.

Haugh Units were measured on 30 eggs from each rep each quarter of the year. Since this factor undergoes seasonal change, the quarterly values and the annual average are given.

Shell Score (Specific Gravity) was secured by using salt solutions to determine the specific gravity of eggs. The eggs with specific gravity below 1.068 were given a score of 0; those between 1.068 and 1.072, a score of 1; etc. with those exceeding 1.100 receiving a score of 9. One day's production from each group of birds was classified in the months indicated.

Part IV of Tables

Entry No. and Cage Type are the same as above.

Causes of Mortality were assigned from autopsy findings. Birds were held in a freezer as mortality occurred and examined at a North Carolina Department of Agriculture Diagnostic Laboratory once each week. We express our appreciation to the staff at the Monroe, NC Lab for providing this service to the test. The 12-point classification system was used on autopsy reports. Some categories which accounted for little mortality were combined under "Other" in the interest of saving space. Too few of the birds that died during the growing period reached the lab in good condition to provide meaningful comparisons. Consequently no causes of growing mortality are published.

Part V of Tables

Entry No. and Cage Type are the same as above.

Commercial Egg Gradeout was made by stocks during the weeks indicated at the FCX plant at Charlotte, North Carolina. Percent Grade A or Better - jumbo and extra large, large, medium, and small and pee wee are consumer grades. % Breaker combines C quality, B quality, small inclusions, and stains which constitute breaker stock with sound shells and crax which are non-leakers with unsound shells removed for breaker stock. % Farm Loss is the percentage of unsound eggs removed before shipping and % Other Loss includes all other eggs shipped (large spots, addled eggs, leakers, lost in machines, etc.). Seasonal data are not combined.

Part VI of Tables

This section of tables is presented only for the average performance of the entries in all types of housing and for only the four characteristics listed.

The Range column indicates those entries which are in the most desirable half of the range above the mean by 1, those between this point and the mean by 2, those in the least desirable half of the range below the mean by 4, and those between this point and the mean by 3.

Entry No. indicates which stock from earlier listing in the tables attained the average performance value shown.

Entries spanned by the same vertical line in the Duncan Test column have a greater than 5% probability that the indicated difference is due to sampling variation.

TABLE 23-4A-CI. Body Weight, Egg Size, Maturity, and Egg Production

TABLE 23-4B-CI. Body Weight, Egg Size, Maturity, and Egg Production

Entry No.	Type Cage	Breeder	Average Body Weight		% Egg Size, Distribution				Wt. Egg Oz./Doz.	Egg Production Rate - %								
			147 Days	497 Days	Pee	Wee	Small	Medium		148-231 Days	232-315 Days							
1	S	Shaver (S-288A)	3.12	4.22	0.6	9.0	13.8	51.2	25.5	24.9	158.5	78.5	90.6	81.6	72.6	66.7	82.3	267.9
2	S	Dekalb (XL Link)	3.03	3.89	0.8	8.8	13.5	43.7	33.2	25.3	163.0	77.5	87.8	79.9	73.7	70.7	82.0	262.3
3	S	Hy-Line (W-36)	3.00	3.92	0.6	10.4	11.7	39.0	38.3	25.5	164.5	72.1	85.8	77.9	72.3	69.0	79.8	257.5
4	S	Babcock (B-300V)	3.10	4.14	0.7	8.4	11.6	44.4	35.0	25.2	156.5	79.2	84.6	79.9	73.6	71.5	80.6	260.2
5	S	H&N (p.g./Two)	3.16	4.00	1.0	9.9	12.1	44.1	32.8	25.2	156.5	82.2	84.2	78.6	73.7	72.0	80.7	267.9
6	S	Colonial (365-S)	2.44	2.88	1.8	14.9	20.7	43.3	19.3	24.1	163.0	75.2	77.9	67.2	59.6	56.9	71.6	221.0
7	S	Haley (H-630)	3.26	4.20	0.8	8.4	10.3	40.6	39.9	25.6	154.0	79.1	83.6	71.5	71.2	68.6	77.2	247.1
8	S	Hardy (Concord)	3.90	5.11	0.4	5.4	7.7	36.3	50.2	26.2	177.5	57.2	77.2	70.3	64.0	60.6	71.5	226.0
9	S	Dekalb (Sex-Sal-Link G)	3.86	4.98	0.1	2.3	5.2	23.6	68.8	27.8	178.0	57.3	87.7	77.1	71.3	68.8	79.3	234.2
10	S	Hubbard (Gld. Comet)	3.77	4.72	0.4	5.7	8.3	35.2	50.3	26.3	160.0	78.9	82.8	70.5	65.7	63.3	76.4	244.2
11	S	Euribrid (Hisex White)	2.97	3.85	2.0	11.5	15.8	41.3	29.4	24.8	152.5	85.1	86.1	80.8	70.9	65.5	81.1	241.3
12	S	Hubbard (Leghorn)	3.29	4.34	0.6	6.8	10.7	40.4	41.4	25.8	160.0	72.7	85.8	77.0	73.3	70.7	79.2	259.1
0	S	Average	3.24	4.19	0.8	8.4	11.8	40.3	38.7	25.6	162.0	74.6	84.5	76.0	70.2	67.0	78.5	249.1
1	D	Shaver (S-288A)	3.22	4.12	0.8	10.4	14.0	46.8	28.0	25.1	160.0	75.2	84.8	76.1	65.3	59.5	76.8	253.0
2	D	Dekalb (XL Link)	3.08	3.92	1.0	10.5	13.4	45.1	30.0	25.1	160.5	74.9	84.0	74.4	67.7	64.7	76.5	251.9
3	D	Hy-Line (W-36)	3.12	3.77	0.7	11.5	16.0	41.3	30.5	25.0	168.0	70.8	82.5	73.7	68.3	68.2	76.9	250.6
4	D	Babcock (B-300V)	2.85	4.01	0.6	8.5	10.1	42.9	37.9	25.5	165.0	70.6	81.0	70.7	70.0	66.9	76.1	247.5
5	D	H&N (p.g./Two)	3.10	3.81	0.6	9.8	14.1	46.4	29.0	25.1	163.0	76.4	87.1	76.9	74.6	72.4	81.1	258.5
6	D	Colonial (365-S)	3.35	2.87	0.9	17.2	21.3	41.9	18.6	24.1	165.0	70.3	74.7	65.5	62.5	61.5	70.4	221.6
7	D	Haley (H-630)	3.35	4.10	0.8	10.5	14.6	41.0	33.0	25.2	156.0	78.1	82.0	67.1	66.1	62.7	74.5	236.1
8	D	Hardy (Concord)	4.06	5.13	0.3	5.6	10.5	33.7	49.9	26.3	175.0	58.7	79.3	70.4	63.1	59.6	71.8	224.7
9	D	DeKalb (Sex-Sal-Link G)	3.59	5.35	0.2	2.2	6.7	24.7	66.2	28.2	188.5	47.8	87.8	80.9	73.9	71.4	79.9	236.0
10	D	Hubbard (Gld. Comet)	3.65	4.59	0.3	5.8	9.9	32.8	51.3	26.3	168.0	68.2	81.4	75.6	67.1	64.6	75.7	250.8
11	D	Euribrid (Hisex Wh.)	3.15	3.77	1.5	12.8	14.9	41.8	29.0	24.8	154.0	78.6	81.5	71.6	68.2	69.3	75.6	243.3
12	D	Hubbard (Leghorn)	2.98	4.00	0.5	10.4	12.2	44.1	32.7	25.1	163.5	70.8	84.0	72.2	69.6	71.3	76.7	248.7
0	D	Average	3.21	4.12	0.7	9.6	13.1	40.2	36.3	25.5	165.5	70.0	82.5	72.9	68.0	66.0	76.0	243.6

TABLE 23-4C-CI. Body Weight, Egg Size, Maturity, and Egg Production

Entry No.	Type Cage	Breeders	Average Body Weight		% Egg Size, Distribution			Age at 50% Production Oz./Doz.	Average Egg Wt.	Days 497	Days 147	Days 497	Days 147	Days 316-399	Days 400-497	Days 456-497	Egg Production Rate - %	After 50% Production Days	Eggs Per Housed
			Small	Medium	Large	Extra Large	and Over												
1	S	Shaver (S-288A)	3.17	4.22	0.9	8.2	15.2	41.6	34.1	25.2	161.5	73.9	85.5	73.6	76.1	73.1	79.4	249.1	
2	S	Dekalb (XL Link)	3.08	3.97	0.7	7.6	13.1	42.7	35.9	25.5	162.5	73.8	82.7	81.5	71.5	66.1	79.7	255.1	
3	S	Hy-Line (W-36)	3.08	4.11	0.6	10.5	12.5	45.8	30.7	25.1	166.0	72.0	85.4	77.5	70.8	67.4	79.4	260.8	
4	S	Babcock (B-300V)	3.06	4.20	1.1	8.4	11.3	42.5	36.7	25.5	163.0	76.0	82.6	74.0	73.1	71.7	78.6	259.4	
5	S	H&N (p.g./Two)	3.14	4.02	0.7	8.5	13.7	43.4	33.7	25.4	157.0	79.4	88.0	70.9	78.0	75.6	80.8	266.3	
6	S	Colonial (365-S)	2.47	3.03	0.9	11.3	16.4	46.2	25.2	24.6	168.0	66.8	76.9	68.4	65.2	61.4	72.3	206.6	
7	S	Hailey (H-630)	3.46	4.44	0.9	8.2	12.1	41.4	37.4	25.5	154.5	77.1	81.4	77.4	66.9	63.3	76.7	246.5	
8	S	Hardy (Concord)	3.91	5.40	0.4	3.6	7.2	33.0	55.9	27.1	179.5	50.5	76.2	67.1	62.0	58.8	69.1	208.9	
9	S	Dekalb (Sex-Sal-Link G)	3.54	5.31	0.1	2.1	5.2	23.2	69.4	28.3	192.0	45.0	82.9	80.1	73.1	68.7	77.6	235.5	
10	S	Hubbard (Gld. Comet)	3.60	4.72	0.4	7.3	10.6	36.7	45.0	26.1	166.0	70.3	83.5	75.6	69.2	66.6	77.5	239.3	
11	S	Euribrid (Hisex White)	2.82	3.76	1.5	11.9	15.9	45.0	25.6	24.5	157.5	78.0	84.5	79.2	75.8	73.1	80.8	255.4	
12	S	Hubbard (Leghorn)	3.06	4.28	1.2	10.0	11.9	47.8	29.2	25.2	164.5	73.9	84.5	77.0	74.3	69.7	79.9	258.0	
0	S	Average	3.20	4.29	0.8	8.1	12.1	40.8	38.2	25.7	166.0	69.7	82.8	75.2	70.3	68.0	77.6	245.1	
1	D	Shaver (S-288A)	3.13	4.28	0.5	7.3	13.9	45.4	32.9	25.4	168.0	70.3	85.5	82.4	74.7	72.6	81.4	252.9	
2	D	Dekalb (XL Link)	3.04	4.01	0.5	8.2	12.6	45.2	33.5	25.4	164.0	70.8	82.8	72.5	67.8	67.4	76.1	245.3	
3	D	Hy-Line (W-36)	3.01	3.95	0.5	9.6	14.1	42.0	33.8	25.3	169.0	69.0	84.3	78.3	71.4	67.5	79.5	257.3	
4	D	Babcock (B-300V)	2.52	4.00	0.4	7.5	11.7	44.4	36.0	25.5	168.5	65.0	82.5	75.8	73.1	74.7	78.4	245.2	
5	D	H&N (p.g./Two)	3.14	4.18	0.5	7.8	12.5	41.2	38.0	25.6	163.0	74.6	83.0	71.3	70.3	66.8	77.3	247.4	
6	D	Colonial (365-S)	2.42	3.01	1.3	14.0	19.0	45.0	20.7	24.4	168.0	67.4	77.0	67.2	64.2	62.1	71.8	216.0	
7	D	Hailey (H-630)	3.30	4.17	1.1	10.8	14.7	37.2	36.1	25.3	166.0	69.9	77.7	72.1	65.4	64.4	73.2	237.3	
8	D	Hardy (Concord)	3.95	5.25	0.9	4.9	10.1	31.9	52.2	26.6	188.5	48.4	70.1	62.8	57.3	57.5	64.3	201.0	
9	D	Dekalb (Sex-Sal-Link G)	3.76	5.18	0.2	2.6	6.5	24.0	66.7	27.9	180.5	49.5	72.3	70.3	65.8	64.8	69.0	218.8	
10	D	Hubbard (Gld. Comet)	3.90	4.84	0.7	6.8	9.4	32.6	50.6	26.2	158.5	73.9	80.0	71.9	64.4	62.2	73.5	244.9	
11	D	Euribrid (Hisex White)	3.07	3.95	1.4	10.8	14.2	41.7	31.9	25.1	154.0	78.5	81.9	76.8	70.1	68.1	77.4	254.5	
12	D	Hubbard (Leghorn)	3.28	4.46	0.6	8.0	11.3	37.5	42.6	25.9	161.5	73.5	83.2	72.6	69.6	67.4	76.5	243.1	
0	D	Average	3.21	4.27	0.7	8.2	12.5	39.0	39.6	25.7	167.5	67.6	80.0	72.8	67.8	66.3	74.9	238.6	

TABLE 23-4D-CI. Body Weight, Egg Size, Maturity, and Egg Production

Entry No.	Type Cage	Breeder	Average Body Weight		% Egg Size, Distribution				Egg Wt. Oz./Doz.	Egg Production Rate - %		Eggs Per Pullet Housed						
			147 Days	497 Days	Pee	Wee	Small	Medium		148-231 Days	232-315 Days	316-399 Days	400-497 Days	456-497 Days				
1	S	Shaver (288A)	3.10	4.18	1.2	10.5	16.9	46.1	25.3	24.7	160.6	75.0	86.6	73.6	72.3	66.6	78.7	242.5
2	S	Dekalb (XL Link)	3.08	3.89	1.1	10.0	13.4	42.3	33.1	25.2	161.8	75.3	86.4	78.5	73.9	70.3	80.7	252.9
3	S	Hy-Line (W-36)	3.08	3.94	1.0	12.9	15.2	41.6	29.3	24.9	165.7	71.0	83.9	73.8	69.9	66.1	77.4	249.0
4	S	Babcock (B-300V)	3.08	4.09	1.5	9.8	13.0	46.4	29.3	24.9	158.2	75.8	82.8	73.9	72.0	69.3	77.4	254.4
5	S	H&N (p.g./Two)	3.16	3.95	1.1	10.4	14.3	44.4	29.7	25.0	156.5	79.0	85.2	73.1	73.6	71.9	79.0	257.8
6	S	Colonial (365-S)	2.52	2.91	1.8	15.8	20.3	42.9	19.1	24.0	163.2	69.1	75.5	65.4	60.7	57.1	69.5	210.5
7	S	Halley (H-630)	3.30	4.19	1.1	10.3	13.4	42.5	32.7	25.2	156.0	76.3	81.7	71.4	69.3	65.5	75.8	242.8
8	S	Hardy (Concord)	3.86	5.15	0.5	6.0	9.5	36.5	47.5	26.2	178.2	55.8	77.3	65.6	60.9	56.2	69.3	217.8
9	S	Dekalb (Sex-Sal-Link G)	3.69	5.16	0.2	2.8	5.8	25.3	65.8	27.8	183.0	52.4	85.2	78.1	72.3	68.7	78.3	237.9
10	S	Hubbard (Gld. Comet)	3.66	4.70	0.7	7.5	9.9	36.2	45.7	26.0	163.0	74.3	83.8	73.9	67.9	65.2	77.2	240.0
11	S	Euribrid (Hisex White)	2.91	3.75	2.3	11.9	17.1	43.7	25.0	155.2	80.0	86.7	80.0	73.4	68.7	80.7	246.3	
12	S	Hubbard (Leghorn)	3.16	4.24	1.2	9.4	12.7	43.6	33.1	25.3	162.0	72.1	82.8	73.6	72.1	67.6	77.3	251.2
0	S	Average	3.22	4.18	1.1	9.8	13.5	41.0	34.6	25.3	163.6	71.3	83.2	73.4	69.9	66.1	76.8	241.9
1	D	Shaver (288A)	3.18	4.17	0.9	9.5	14.3	47.1	28.3	25.1	163.5	71.1	85.8	76.9	70.8	66.9	78.3	240.7
2	D	Dekalb (XL Link)	3.08	3.94	1.0	10.4	13.6	45.1	29.9	25.1	163.7	71.3	83.6	71.7	68.8	66.8	76.1	239.1
3	D	Hy-Line (W-36)	3.06	3.86	1.0	13.1	16.8	42.4	26.7	24.7	168.0	69.8	84.1	72.2	68.1	66.6	77.0	250.0
4	D	Babcock (B-300V)	2.78	3.95	1.1	9.7	13.8	44.3	31.1	25.1	163.5	69.5	81.8	69.0	70.1	68.7	75.4	246.0
5	D	H&N (p.g./Two)	3.15	3.98	0.8	10.2	14.4	44.4	30.2	25.1	161.2	75.3	84.9	74.1	72.1	68.4	78.6	249.3
6	D	Colonial (365-S)	2.44	2.93	2.0	17.9	21.5	41.7	16.9	23.8	162.8	68.6	74.4	64.4	61.7	59.4	69.3	206.8
7	D	Halley (H-630)	3.32	4.16	1.3	11.3	15.0	39.0	33.5	25.2	160.2	73.2	79.4	67.9	64.7	60.7	72.8	227.9
8	D	Hardy (Concord)	3.83	5.14	0.5	5.8	10.5	35.5	47.7	26.3	182.8	51.7	74.9	66.3	60.3	57.1	68.0	212.7
9	D	Dekalb (Sex-Sal-Link G)	3.65	5.21	0.2	2.9	6.9	26.8	63.2	27.7	183.8	50.4	81.0	74.5	68.8	66.6	74.7	227.6
10	D	Hubbard (Gld. Comet)	3.71	4.68	0.6	6.9	10.7	34.8	46.9	26.0	161.5	71.0	81.5	73.1	65.0	63.0	74.2	243.2
11	D	Euribrid (Hisex White)	3.02	3.81	2.1	12.9	15.9	42.7	26.3	24.6	153.5	78.5	83.8	74.4	70.3	67.9	77.1	245.7
12	D	Hubbard (Leghorn)	3.12	4.19	1.0	10.4	13.5	42.1	33.1	25.2	161.7	72.9	84.2	72.1	70.0	68.2	76.9	245.9
0	D	Average	3.19	4.17	1.0	13.9	40.5	34.5	25.3	165.5	68.6	81.6	71.4	67.6	65.0	74.9	236.2	

TABLE 23-4A-SI. Body Weight, Egg Size, Maturity, and Egg Production

Entry No.	Type Cage	Breeder	Average Body Weight		% Egg Size, Distribution			Egg Production Rate - %											
			47 Days	497 Days	Small	Medium	Large	Extra Large and Over	Average Egg Wt.	Oz./Doz.	Age at 50% Production	400-497 Days	316-399 Days	232-315 Days	148-231 Days	456-497 Days	After 50% Production	Eggs Per House	
1	3	Shaver (S-288A)	3.08	4.15	1.9	13.1	19.5	45.7	19.9	24.4	160.5	69.8	87.7	73.2	68.7	72.6	71.7	218.0	
2	3	Dekalb (XL Link)	3.18	4.02	1.6	11.5	12.7	40.9	33.3	25.2	162.0	73.2	87.0	70.6	87.2	66.4	63.7	77.7	244.5
3	3	Hy-Line (W-36)	3.16	3.98	1.8	16.9	20.4	43.0	17.9	24.1	164.0	70.7	82.0	74.9	82.0	64.4	65.8	76.1	252.1
4	3	Babcock (B-300V)	3.14	4.11	2.7	12.2	15.7	48.7	20.7	24.5	153.5	74.9	82.0	64.4	64.4	65.8	60.9	71.9	250.4
5	3	H&N (p.g./Two)	3.18	3.92	1.7	13.7	18.5	45.9	20.2	24.3	156.5	76.6	84.8	72.6	72.6	71.1	69.4	77.4	241.3
6	3	Colonial (365-S)	2.56	2.89	2.7	20.8	24.1	38.6	13.9	23.3	157.0	67.0	74.3	59.2	56.9	53.4	65.4	65.4	202.6
7	3	Halley (H-630)	3.18	4.02	1.8	13.2	16.6	42.0	26.4	24.9	159.5	73.9	80.7	67.0	68.2	61.7	74.0	74.0	236.1
8	3	Hardy (Concord)	3.58	5.07	0.2	7.9	12.6	40.7	38.6	25.8	181.0	55.0	77.5	66.7	59.1	52.1	69.2	69.2	222.0
9	3	Dekalb (Sex-Sal-Link G)	3.58	5.20	0.2	4.4	6.4	30.6	58.4	27.0	182.5	54.0	87.0	74.9	71.2	68.1	78.4	78.4	246.4
10	3	Hubbard (Gld. Comet)	3.56	4.68	1.2	8.4	12.5	37.5	40.4	25.6	159.5	73.7	87.2	76.3	67.8	64.8	77.8	77.8	245.9
11	3	Euribrid (Hisex White)	2.90	3.64	3.6	14.1	18.8	42.3	21.2	24.1	155.0	77.4	89.4	77.6	73.5	65.0	79.9	79.9	241.2
12	3	Hubbard (Leghorn)	3.12	4.22	1.9	11.9	15.9	41.7	28.5	24.7	160.5	72.8	82.5	71.0	70.9	64.3	76.2	76.2	244.7
0	3	Average	3.18	4.16	1.8	12.3	16.2	41.5	28.3	24.8	162.6	69.9	83.9	69.9	67.8	63.1	75.1	73.1	
1	4	Shaver (S-288A)	3.12	4.07	1.6	12.2	17.1	48.7	20.4	24.4	162.0	70.5	83.1	64.6	70.7	67.1	74.2	74.2	208.6
2	4	Dekalb (XL Link)	3.08	3.68	1.5	14.7	15.8	44.6	23.3	24.5	164.5	69.5	85.7	73.8	74.9	70.7	78.6	78.6	216.9
3	4	Hy-Line (W-36)	3.04	3.69	1.8	19.3	21.3	40.9	16.7	23.8	169.5	67.5	78.8	63.4	64.7	62.4	71.5	71.5	218.8
4	4	Babcock (B-300V)	2.92	3.64	2.3	13.6	19.9	49.5	14.7	23.9	158.5	70.0	81.2	64.1	70.4	68.5	72.7	72.7	238.5
5	4	H&N (p.g./Two)	3.20	3.85	1.3	12.2	15.2	45.3	26.0	24.7	157.0	73.7	83.3	71.4	69.5	64.7	75.7	75.7	239.9
6	4	Colonial (365-S)	2.60	2.84	3.7	22.9	24.1	39.0	10.4	23.1	157.0	66.3	69.0	61.8	58.7	54.1	65.0	65.0	184.2
7	4	Halley (H-630)	3.30	4.11	1.8	13.8	16.6	42.2	25.7	24.7	158.5	70.6	78.0	62.7	64.1	57.7	70.1	70.1	209.0
8	4	Hardy (Concord)	3.66	4.94	0.6	8.1	12.0	40.2	39.1	25.7	181.5	52.5	76.2	58.5	58.3	52.3	66.1	66.1	208.9
9	4	Dekalb (Sex-Sal-Link G)	3.69	5.07	0.5	3.7	8.2	30.0	57.7	27.3	179.0	55.0	80.9	74.4	67.9	63.9	74.6	74.6	225.7
10	4	Hubbard (Gld. Comet)	3.64	4.60	1.0	9.3	11.1	38.2	40.3	25.5	161.5	71.0	80.9	71.3	64.3	63.2	73.3	73.3	224.7
11	4	Euribrid (Hisex White)	2.88	3.69	3.3	13.5	19.2	47.2	16.7	23.9	153.0	78.0	87.8	76.9	72.7	68.6	78.7	78.7	240.1
12	4	Hubbard (Leghorn)	3.13	3.98	1.5	12.3	16.4	45.6	24.2	24.6	161.0	71.0	80.9	67.4	68.6	64.1	74.1	74.1	237.9
0	4	Average	3.19	4.01	1.7	13.0	16.4	42.6	26.3	24.7	163.6	68.0	80.5	67.5	67.1	63.0	72.9	72.9	221.1

TABLE 23-4B-SI. Body Weight, Egg Size, Maturity, and Egg Production

Entry No.	Type Cage	Breeder	Average Body Weight		% Egg Size, Distribution				Wt. Egg Oz./Doz.	Egg Production Rate - %		Eggs Per Pullet Housed						
			147 Days	497 Days	Pee	Wee	Small	Medium		148-231 Days	232-315 Days	316-399 Days	456-497 Days					
1	3	Shaver (S-288A)	3.21	4.24	0.9	10.2	14.1	45.7	29.1	25.0	156.5	79.6	88.9	81.0	68.7	63.2	80.4	272.1
2	3	Dekalb (XL Link)	3.10	4.00	0.8	8.6	12.5	44.2	33.9	25.3	164.5	80.6	88.0	82.7	72.1	67.0	82.8	266.5
3	3	Hy-Line (W-36)	3.06	4.03	0.5	8.8	12.4	38.5	39.8	25.6	167.0	72.2	85.9	77.7	70.7	66.6	79.7	256.2
4	3	Babcock (B-300V)	2.88	3.99	0.7	6.9	11.0	42.8	38.6	25.4	163.5	73.5	83.3	76.6	71.8	69.4	78.9	263.7
5	3	H&N (p.g./Two)	3.14	3.95	0.9	9.7	12.2	44.4	32.8	25.2	156.5	82.5	87.5	77.4	72.9	70.1	81.0	270.6
6	3	Colonial (365-S)	2.48	3.01	1.4	15.4	19.1	41.4	22.7	24.3	165.0	73.1	75.7	65.0	59.8	58.2	70.3	218.7
7	3	Haley (H-630)	3.30	4.18	0.6	7.4	11.7	39.8	40.6	25.7	156.0	80.1	84.6	70.4	69.2	65.9	77.2	250.0
8	3	Hardy (Concord)	4.00	5.17	0.3	5.1	9.9	33.6	51.2	26.3	179.5	58.8	81.4	73.0	64.6	60.5	73.9	240.5
9	3	DeKalb (Sex-Sal-Link G)	3.72	5.20	0.1	1.8	5.6	23.0	69.4	28.0	182.0	53.1	88.8	81.1	73.3	69.7	81.0	246.6
10	3	Hubbard (Gld. Comet)	3.94	4.82	0.4	6.0	9.2	30.6	53.8	26.3	161.0	80.3	83.7	71.7	63.7	60.4	76.6	250.7
11	3	Euribrid (Hisex White)	3.07	3.86	1.8	11.1	14.5	41.2	31.3	24.9	153.5	84.6	84.6	74.1	69.9	68.0	78.6	242.6
12	3	Hubbard (Leghorn)	3.17	4.18	0.5	8.6	11.4	43.5	25.4	161.5	74.1	86.7	78.6	73.6	73.9	80.5	256.9	
0	3	Average	3.26	4.22	0.8	8.3	11.9	39.1	39.9	25.6	163.9	74.4	84.9	75.8	69.2	66.1	78.4	252.9
1	4	Shaver (S-288A)	3.13	4.10	0.5	9.2	13.7	52.5	24.4	24.9	162.0	74.1	86.5	76.7	69.2	63.0	78.6	248.8
2	4	Dekalb (XL Link)	3.01	3.80	1.0	10.7	14.5	44.6	29.3	25.0	159.0	71.8	83.8	71.5	69.3	68.5	75.8	247.7
3	4	Hy-Line (W-36)	3.07	3.65	0.8	13.0	15.3	41.8	29.0	24.9	165.5	70.7	82.4	74.0	69.9	70.6	76.9	251.8
4	4	Babcock (B-300V)	3.06	4.16	0.6	9.9	10.8	44.4	34.3	25.3	158.0	76.3	82.3	74.0	71.8	69.0	77.8	244.0
5	4	H&N (p.g./Two)	3.12	3.87	0.7	1.0	14.1	46.2	29.0	25.1	163.0	76.2	83.8	78.1	75.4	74.3	80.8	255.8
6	4	Colonial (365-S)	2.32	2.74	1.3	16.7	22.9	43.7	15.3	23.9	163.0	72.4	76.8	67.7	62.3	60.2	71.6	223.9
7	4	Haley (H-630)	3.32	4.11	1.1	11.4	13.3	41.9	32.3	25.1	154.0	77.1	81.0	68.2	68.2	65.5	74.6	233.2
8	4	Hardy (Concord)	3.97	5.06	0.4	5.9	8.3	36.4	49.0	26.3	173.0	57.1	75.1	67.7	62.4	59.7	69.4	210.2
9	4	Dekalb (Sex-Sal-Link G)	3.74	5.12	0.2	2.7	6.3	25.4	65.5	28.0	184.5	52.0	86.7	76.9	71.9	70.5	78.2	223.6
10	4	Hubbard (Gld. Comet)	3.48	4.49	0.2	5.5	9.0	37.4	47.8	26.3	167.0	66.8	80.5	74.3	69.0	67.5	75.5	244.3
11	4	Euribrid (Hisex White)	3.05	3.75	1.7	13.1	16.1	41.9	27.2	24.6	153.0	79.0	83.0	78.3	69.2	66.8	78.1	242.0
12	4	Hubbard (Leghorn)	3.10	4.16	0.7	8.6	11.5	41.0	38.2	25.6	162.0	69.5	83.1	70.7	69.3	68.0	75.4	250.9
0	4	Average	3.20	4.09	0.8	9.7	13.0	41.4	35.1	25.4	163.7	70.3	82.1	73.2	69.0	67.0	76.0	239.7

TABLE 23-4C-SI. Body Weight, Egg Size, Maturity, and Egg Production

Entry No.	Type Cage	Breeder	Average Bird Weight		% Egg Size, Distribution		Egg Production Rate - %		Eggs Per Housed									
			47 Days	497 Days	Peewee	Small	Medium	Large		Age at 50% Production	400-497 Days	316-399 Days	232-315 Days	148-231 Days	After 50% Production	456-497 Days		
1 3	Shaver (S-288A)		3.22	4.28	0.7	8.2	15.3	43.0	32.7	25.3	165.5	72.3	85.9	76.6	75.1	80.5	257.6	
2 3	DeKalb (XL Link)		3.02	3.94	0.5	7.3	12.6	42.8	36.8	25.6	165.0	72.4	84.0	81.6	73.0	70.5	80.6	261.4
3 3	Hy-Line (W-36)		3.02	4.17	0.5	10.3	13.4	44.4	31.3	25.2	167.5	72.4	86.4	78.2	70.6	65.7	80.1	267.4
4 3	Babcock (B-300V)		2.69	4.18	0.6	6.9	10.4	40.4	41.7	25.7	169.5	70.4	84.5	78.4	75.7	69.4	81.2	261.1
5 3	H&N (p.g./Two)		3.20	4.16	0.6	7.7	12.0	43.6	36.1	25.5	160.0	80.3	87.0	72.4	74.2	70.1	80.3	268.6
6 3	Colonial (365-S)		2.48	3.05	1.3	13.8	17.1	44.3	23.5	24.5	166.0	71.2	78.5	66.4	66.0	58.2	73.1	214.5
7 3	Haley (H-630)		3.32	4.43	0.7	7.0	11.7	39.6	40.9	25.8	159.5	75.9	83.6	79.5	69.6	65.9	78.7	259.0
8 3	Hardy (Concord)		4.16	5.47	1.2	5.7	9.1	32.3	51.7	26.5	172.5	58.3	76.0	66.7	59.1	60.5	68.7	215.3
9 3	DeKalb (Sex-Sal-Link G)		3.58	5.33	0.1	1.7	5.2	23.9	69.2	28.1	193.5	43.9	81.0	77.6	72.3	69.7	76.0	227.9
10 3	Hubbard (Gld. Comet)		3.68	4.84	0.5	6.4	10.2	34.5	48.4	26.3	161.0	71.5	82.4	74.7	68.3	60.4	76.1	248.9
11 3	Euribrid (Hisex White)		3.08	3.94	1.8	12.1	15.4	41.6	29.1	24.7	152.0	78.5	84.9	79.0	72.4	68.0	79.1	249.1
12 3	Hubbard (Leghorn)		3.26	4.58	0.9	9.3	11.5	41.7	36.5	25.6	161.0	74.6	83.1	73.4	73.3	73.9	78.1	256.0
0 3	Average		3.23	4.36	0.8	8.0	12.0	39.4	39.8	25.7	166.0	70.1	83.1	75.4	70.9	67.9	77.7	248.9
1 4	Shaver (S-288A)		3.08	4.22	0.6	7.3	13.8	44.0	34.3	25.3	164.0	71.8	85.1	79.4	74.2	70.7	80.3	244.4
2 4	DeKalb (XL Link)		3.09	4.04	0.8	8.5	13.1	45.0	32.6	25.3	161.5	72.2	81.4	72.4	66.3	63.0	75.2	239.0
3 4	Hy-Line (W-36)		3.06	3.89	0.6	9.8	13.2	43.3	31.2	25.2	167.5	68.6	83.3	77.5	71.6	69.2	78.8	250.7
4 4	Babcock (B-300V)		2.88	4.02	0.9	9.1	12.6	46.4	31.0	25.3	162.0	70.7	80.6	71.4	70.5	69.0	75.8	243.6
5 4	H&N (p.g./Two)		3.09	4.04	0.5	8.7	14.1	41.0	35.6	25.5	160.0	73.7	84.0	69.8	74.1	74.3	77.8	245.2
6 4	Colonial (365-S)		2.41	2.99	1.0	11.5	18.2	47.0	22.4	24.5	170.0	63.0	75.4	69.2	63.3	60.2	71.0	208.1
7 4	Haley (H-630)		3.44	4.18	1.2	12.0	15.2	39.0	32.6	24.9	161.0	71.2	75.5	70.0	62.7	65.5	71.2	224.8
8 4	Hardy (Concord)		3.70	5.18	0.1	2.8	8.1	32.6	56.3	27.2	195.5	40.6	70.3	63.2	60.2	59.7	64.7	194.6
9 4	DeKalb (Sex-Sal-Link G)		3.72	5.17	0.2	3.0	6.4	23.3	67.0	28.1	179.0	50.6	74.2	72.8	66.6	70.5	70.6	226.3
10 4	Hubbard (Gld. Comet)		3.82	4.73	0.5	7.7	9.9	34.8	47.1	26.1	163.5	72.7	81.1	72.8	65.3	67.5	74.8	235.3
11 4	Euribrid (Hisex White)		2.82	3.78	1.2	10.6	14.7	45.1	28.5	25.0	159.5	78.0	81.4	77.1	73.5	66.8	79.1	260.8
12 4	Hubbard (Leghorn)		3.08	4.16	0.9	8.7	11.6	43.5	35.3	25.4	165.0	72.8	84.6	76.2	70.6	68.0	78.4	245.0
0 4	Average		3.18	4.20	0.7	8.3	12.6	40.4	38.0	25.6	167.4	67.2	79.7	72.6	68.2	66.3	74.8	234.8

TABLE 23-4D-SI. Body Weight, Egg Size, Maturity, and Egg Production

Entry No.	Type Cage	Breeder	Average Bird Weight		% Egg Size, Distribution				Age at 50% Production	Egg Production Rate - %								
			147 Days	497 Days	Pee	Wee	Small	Medium	Large	Extra Large and Over	148-231 Days	232-315 Days	316-399 Days					
1	3	Shaver (S-288A)	3.17	4.22	1.2	10.5	16.3	44.8	27.2	24.9	160.8	73.9	87.5	77.0	71.7	66.6	79.3	249.2
2	3	Dekalb (XL Link)	3.10	3.99	1.0	9.1	12.6	42.7	34.7	25.4	163.8	75.4	86.3	77.7	72.6	69.7	80.4	257.5
3	3	Hy-Line (W-36)	3.08	4.06	0.9	12.0	15.4	42.0	29.7	24.9	166.2	71.8	86.5	74.3	69.2	65.3	78.6	258.6
4	3	Babcock (B-300V)	2.90	4.09	1.3	8.7	12.4	44.0	33.7	25.2	162.2	72.9	83.3	73.1	71.1	68.3	77.3	258.4
-13-	8	H&N (p.g./Two)	3.17	4.01	1.1	10.3	14.2	44.6	29.7	25.0	157.7	79.8	86.4	74.1	72.7	70.1	79.6	260.2
5	3	Colonial (365-S)	2.51	2.98	1.8	16.6	20.1	41.4	20.0	24.1	162.7	70.4	76.2	63.5	60.9	58.0	69.6	211.9
6	3	Haley (H-630)	2.27	4.21	1.0	9.2	13.3	40.5	36.0	25.5	158.3	76.6	83.0	72.3	69.0	63.9	76.6	248.4
7	3	Hardy (Concord)	3.91	5.24	0.6	6.2	10.5	35.5	47.2	26.2	177.7	57.4	78.3	68.8	61.0	56.7	70.6	225.9
8	3	DeKalb (Sex-Sal-Link G)	3.62	5.25	0.1	2.6	5.7	25.9	65.7	27.7	186.0	50.3	85.6	77.9	72.3	69.0	78.5	240.3
9	3	Hubbard (Gld. Comet)	3.73	4.78	0.7	6.9	10.6	34.2	47.6	26.1	160.5	75.2	84.5	74.2	66.6	63.9	76.8	248.5
10	3	Euribrid (Hisex White)	3.01	3.81	2.4	12.5	16.2	41.7	27.2	24.6	153.5	80.2	86.3	76.9	72.0	67.3	79.2	244.3
11	3	Hubbard (Leghorn)	3.18	4.33	1.1	10.0	13.0	42.3	33.6	25.2	161.0	73.8	84.1	74.3	72.6	69.4	78.3	252.6
12	3	Average	3.22	4.25	1.1	9.6	13.4	40.0	36.0	25.4	264.2	71.5	84.0	73.7	69.3	65.7	77.1	246.3
0	3																	
1	4	Shaver (S-288A)	3.11	4.13	0.9	9.5	14.9	48.3	26.4	24.9	162.7	72.1	84.9	73.6	71.3	66.9	77.7	233.9
2	4	Dekalb (XL Link)	3.06	3.84	1.1	11.3	14.5	44.7	28.4	24.9	161.7	71.2	83.6	72.6	70.2	67.4	76.5	234.5
3	4	Hy-Line (W-36)	3.06	3.74	1.1	14.0	16.6	42.0	26.3	24.7	167.5	68.9	81.5	71.6	68.7	67.4	75.7	240.4
4	4	Babcock (B-300V)	2.96	3.94	1.3	10.9	14.4	46.8	26.7	24.8	159.5	72.3	81.4	69.8	70.9	69.7	75.4	242.0
5	4	H&N (p.g./Two)	3.14	3.92	0.9	10.3	14.5	44.2	30.2	25.1	160.0	74.5	83.7	73.1	73.0	70.2	78.1	246.9
6	4	Colonial (365-S)	2.44	2.86	2.0	17.0	21.7	43.2	16.0	23.8	163.3	67.2	73.7	66.3	61.4	58.5	69.2	205.4
7	4	Haley (H-630)	3.35	4.13	1.3	12.4	15.0	41.0	30.2	24.9	157.8	73.0	78.2	66.9	65.0	62.2	72.0	222.4
8	4	Hardy (Concord)	3.77	5.06	0.4	5.5	9.5	36.4	48.1	26.4	183.3	50.1	73.9	63.1	60.3	56.6	66.7	204.6
9	4	Dekalb (Sex-Sal-Link G)	3.72	5.12	0.3	3.1	7.0	26.2	63.4	27.8	180.8	52.5	80.6	74.7	68.8	66.2	74.5	225.2
10	4	Hubbard (Gld. Comet)	3.64	4.61	0.6	7.5	10.0	36.8	45.1	26.0	164.0	70.2	80.9	72.8	66.2	64.3	74.5	234.8
11	4	Euribrid (Hisex White)	2.92	3.74	2.1	12.4	16.7	44.7	24.1	24.5	155.2	78.3	84.1	77.4	71.8	69.3	78.6	247.6
12	4	Hubbard (Leghorn)	3.10	4.10	1.0	9.9	13.2	43.3	32.6	25.2	162.7	71.1	82.9	71.4	69.5	66.5	76.0	244.6
0	4	Average	3.19	4.10	1.1	10.3	14.0	41.5	33.1	25.2	264.9	68.5	80.8	71.1	68.1	65.4	74.6	231.9

TABLE 23-4D-I. Body Weight, Egg Size, Maturity, and Egg Production

Entry No.	Type Cage	Breeder	Average Body Weight		% Egg Size, Distribution		Egg Production Rate - %	Eggs Per Unitet Housed									
			497 Days	147 Days	Small	Mediu	Large	Extra Large and Over	Average Egg Wt. Oz./Doz.	Age at 50% Production Days	400-497 Days	316-399 Days	232-315 Days	148-231 Days	456-497 Days	After 50% Production Days	
1 0	Shaver (S-288A)	3.14	4.18	1.0	10.0	15.6	46.6	26.8	24.9	161.8	73.0	86.2	75.3	71.5	66.8	78.5	241.6
2 0	DeKalb (XL Link)	3.08	3.92	1.0	10.2	13.5	43.7	31.5	25.1	162.8	73.3	85.0	75.1	71.4	68.6	78.4	246.0
3 0	Hy-Line (W-36)	3.07	3.90	1.0	13.0	16.0	42.0	28.0	24.8	166.8	70.4	84.0	73.0	69.0	66.4	77.2	249.5
4 0	Babcock (B-300V)	2.93	4.02	1.3	9.8	13.4	45.4	30.2	25.0	160.8	72.6	82.3	71.5	71.0	69.0	76.4	250.2
5 0	H&N (P.g./Two)	3.15	3.97	1.0	10.3	14.4	44.4	29.9	25.0	158.8	77.2	85.1	73.6	72.9	70.2	78.8	253.6
6 0	Colonial (365-S)	2.48	2.92	1.9	16.8	20.9	42.3	18.0	23.9	163.0	68.8	75.0	64.9	61.2	58.2	69.4	208.7
7 0	Hailey (H-630)	3.31	4.17	1.2	10.8	14.2	40.8	33.1	25.2	158.1	74.8	80.6	69.6	67.0	63.1	74.3	235.4
8 0	Hardy (Concord)	3.84	5.15	0.5	5.9	10.0	36.0	47.6	26.3	180.5	53.7	76.1	66.0	60.6	56.6	68.6	215.2
9 0	DeKalb (Sex-Sal-Link G)	3.67	5.18	0.2	2.9	6.3	26.0	64.5	27.8	183.4	51.4	83.1	76.3	70.5	67.6	76.5	232.8
10 0	Hubbard (Gld. Comet)	3.69	4.69	0.7	7.2	10.3	35.5	46.3	26.0	162.2	72.7	82.7	73.5	66.4	64.1	75.7	241.6
11 0	Euribrid (Hisex White)	2.96	3.78	2.2	12.4	16.5	43.2	25.7	24.5	154.3	79.2	85.2	77.2	71.9	68.3	78.9	246.0
12 0	Hubbard (Leghorn)	3.14	4.21	1.1	9.9	13.1	42.8	33.1	25.2	151.8	72.5	83.5	72.9	71.1	67.9	77.1	248.6
0 0	Average	3.21	4.17	1.1	9.9	13.7	40.7	34.6	25.3	164.5	70.0	82.4	72.4	68.7	65.6	75.8	239.1

TABLE 23-4D-II. Birds, Mortality, Feed Use, Cost, and Income Data

Entry No. Type Cage	Number of Birds	Mortality	Feed Consumed	Value Per Pullet Housed		IOFCC											
				At One Week Housed	At End of Test % 8-147 Days		% 148-497 Days	Ave. Days Lost/ Hen Housed	Per Bird 1-147 Days	Per 100 Bird Days	Per Lb. of Eggs	Per Dozen Eggs	Chick Cost	Growing Feed Cost	Laying Feed Cost	Total Feed and Chick Cost	Value of Eggs
1 0	415	406	347	2.4	13.9	33.9	17.2	22.9	2.32	3.61	0.41	1.59	7.55	9.55	10.62	0.35	1.422
2 0	419	412	358	1.4	12.9	26.3	16.7	22.7	2.28	3.58	0.40	1.55	7.70	9.65	10.78	0.33	1.458
3 0	428	419	391	1.8	6.3	12.6	16.3	21.7	2.27	3.52	0.40	1.51	7.74	9.66	10.96	0.35	1.653
4 0	425	412	379	3.4	7.7	12.9	16.5	22.9	2.37	3.70	0.41	1.57	8.04	10.02	10.98	0.36	1.326
5 0	427	412	364	3.8	11.4	21.2	17.2	23.3	2.32	3.64	0.41	1.58	7.92	9.91	11.09	0.34	1.519
6 0	409	395	311	3.5	21.4	40.6	16.3	19.8	2.36	3.53	0.41	1.53	6.62	8.56	8.79	0.22	0.452
7 0	424	408	346	3.8	14.7	27.8	17.5	23.4	2.45	3.86	0.41	1.62	7.81	9.85	10.21	0.34	0.704
8 0	435	411	376	5.9	8.3	13.3	18.2	24.1	2.76	4.53	0.42	1.71	8.35	10.48	9.74	0.46	-0.285
9 0	415	398	355	4.3	10.6	18.1	17.5	25.2	2.49	4.32	0.42	1.68	8.59	10.68	10.69	0.45	0.452
10 0	435	417	367	4.6	11.8	21.8	18.1	24.0	2.41	3.92	0.42	1.70	8.15	10.26	10.90	0.40	1.040
11 0	412	396	328	4.1	17.3	35.5	17.3	23.0	2.31	3.56	0.41	1.64	7.57	9.63	10.49	0.30	1.160
12 0	429	412	360	4.4	12.1	17.9	17.1	23.7	2.41	3.80	0.41	1.58	8.12	10.12	10.78	0.36	1.020
0 0	423	408	357	3.6	12.4	23.5	17.2	23.1	2.40	3.80	0.41	1.61	7.85	9.87	10.50	0.36	0.993

TABLE 23-4A-CII. Birds, Mortality, Feed Use, Cost, and Income Data

Entry No.	Type Cage	Number of Birds	Mortality	Feed Consumed		Value Per Pullet Housed		IOFCC
				% 8-147 Days	% 148-497 Days	Chick Cost	Total Feed and Chick Cost	
1 S	S	72	72	56	2.0	21.2	59.3	0.238
2 S	S	72	69	57	3.4	16.2	41.8	0.31
3 S	S	71	70	62	1.2	10.4	25.3	1.544
4 S	S	72	71	66	1.9	6.1	13.6	0.959
5 S	S	68	64	54	7.3	15.5	28.5	1.115
6 S	S	71	70	58	2.1	15.8	29.3	0.613
7 S	S	71	70	61	3.0	12.5	24.0	0.363
8 S	S	73	70	66	4.0	5.4	5.2	0.882
9 S	S	70	70	61	0.0	11.7	12.4	0.029
10 S	S	70	70	59	0.8	15.8	37.0	1.200
11 S	S	68	66	56	2.3	15.6	46.2	1.328
12 S	S	71	69	58	3.0	16.0	16.0	1.781
0 S	S	71	69	60	2.6	13.5	28.2	0.677
1 D	D	72	70	56	2.2	19.6	60.5	0.31
2 D	D	70	68	54	2.0	20.2	47.9	1.544
3 D	D	70	69	67	1.6	2.5	7.9	0.31
4 D	D	67	66	64	1.7	3.2	2.3	0.959
5 D	D	73	68	59	6.5	13.6	31.8	1.115
6 D	D	68	66	47	2.7	30.0	67.1	0.613
7 D	D	75	70	55	3.7	20.4	47.5	0.363
8 D	D	72	71	67	2.7	5.3	9.1	0.882
9 D	D	70	70	64	0.0	8.3	18.3	0.35
10 D	D	71	70	62	0.9	10.8	25.6	0.919
11 D	D	67	65	53	2.1	19.8	44.8	1.750
12 D	D	72	70	64	2.7	8.8	23.6	0.786
0 D	D	71	69	59	2.4	13.5	32.2	1.278

TABLE 23-4B-CII. Birds, Mortality, Feed Use, Cost, and Income Data

		Entry No.																				
		Type Cage																				
Number of Birds		Mortality		Feed Consumed																		
		At One Week Housed		At End of Test		% 8-147 Days		% 148-497 Days		Ave. Days Lost		Per Bird 1-147 Days		Per 100 Bird Days		Chick Cost		Growing Feed Cost		Value Per Pullet Housed		
																		Laying Feed Cost		Total Feed and Chick Cost		
																		Value of Eggs		Value of Meat		
																		IOFCC				
-17-																						
1	D	65	65	62	0.0	4.5	12.6	17.6	22.2	2.26	3.55	0.40	1.62	7.85	9.86	11.08	0.38	1.594				
2	D	70	70	66	0.1	5.8	14.1	16.8	22.0	2.25	3.53	0.40	1.56	7.71	9.66	11.01	0.36	1.698				
3	D	71	70	66	1.2	5.8	9.8	16.3	21.0	2.19	3.42	0.40	1.53	7.54	9.47	11.12	0.34	1.991				
4	D	70	70	66	0.0	5.0	11.0	17.0	22.7	2.34	3.73	0.40	1.62	8.04	10.06	10.93	0.37	1.242				
5	D	71	70	61	1.4	12.1	21.4	17.2	22.6	2.20	3.45	0.40	1.59	7.65	9.64	11.43	0.32	2.115				
6	D	70	68	56	2.9	17.9	25.2	15.8	19.8	2.31	3.48	0.41	1.48	6.96	8.85	9.35	0.23	0.725				
7	D	68	66	56	2.8	15.0	28.2	18.1	23.8	2.47	3.90	0.41	1.66	7.89	9.96	10.35	0.34	0.729				
8	D	70	66	59	5.4	9.7	18.4	19.0	24.3	2.62	4.31	0.42	1.76	8.24	10.41	10.21	0.45	0.247				
9	D	66	61	54	8.9	11.1	24.1	17.7	26.0	2.45	4.32	0.44	1.85	8.64	10.93	10.71	0.46	0.241				
10	D	74	70	68	7.2	2.5	5.8	18.4	23.2	2.33	3.82	0.43	1.74	8.17	10.34	11.51	0.43	1.603				
11	D	68	66	57	3.1	13.1	24.9	17.6	23.1	2.40	3.72	0.41	1.68	7.81	9.90	10.56	0.32	0.976				
12	D	68	67	61	1.3	7.7	13.7	16.6	22.7	2.35	3.69	0.40	1.55	7.86	9.81	10.82	0.35	1.369				
0	D	69	67	61	2.9	9.2	17.4	17.3	22.8	2.35	3.74	0.41	1.64	7.86	9.91	10.76	0.36	1.211				

TABLE 23-4C-CII. Birds, Mortality, Feed Use, Cost, and Income Data

Entry No.	Type Cage	At One Week	At End of Test	Number of Birds	Mortality	Feed Consumed	Value Per Pullet Housed			IOFC
							% 8-147 Days	% 148-497 Days	Ave. Days Lost/Hen Housed	
1 D	71	67	66	57	1.8	13.1	27.6	17.6	24.2	0.41
2 D	71	70	61	1.5	12.1	19.4	17.6	28.3	2.37	0.40
3 D	72	70	67	2.8	3.8	8.0	17.3	23.0	2.31	0.41
4 D	75	69	64	8.0	6.8	10.2	17.2	24.5	2.42	0.43
5 S	72	70	65	2.7	6.7	13.5	16.9	24.3	2.33	0.41
6 S	65	62	46	4.5	25.9	51.8	16.0	20.9	2.34	0.41
7 S	73	70	60	5.9	13.3	23.8	18.2	24.8	2.48	0.42
8 S	70	65	56	6.8	13.6	22.3	18.8	26.3	2.92	0.45
9 S	70	65	61	6.8	6.4	13.7	20.0	27.2	2.64	0.42
10 S	76	70	57	7.4	18.3	29.0	17.9	23.6	2.33	0.43
11 S	71	65	57	9.4	12.9	28.1	17.1	23.3	2.30	0.44
12 S	76	69	57	10.9	15.8	16.2	17.9	24.3	2.40	0.44
0 S	72	68	59	5.7	12.4	22.0	17.7	24.2	2.44	0.42
1 D	71	67	57	5.7	14.8	25.8	18.4	23.7	2.30	0.42
2 D	71	70	62	1.5	12.1	14.5	16.9	22.3	2.30	0.40
3 D	73	70	64	4.2	8.3	9.5	17.2	22.7	2.28	0.41
4 D	75	70	60	7.4	14.6	18.9	17.1	23.3	2.37	0.43
5 D	71	70	62	1.7	10.8	19.0	18.3	24.4	2.45	0.40
6 D	69	67	54	3.0	19.1	36.2	16.4	20.4	2.34	0.41
7 D	70	68	60	3.2	11.2	16.6	17.7	23.4	2.51	0.41
8 D	80	70	64	15.1	8.8	11.8	19.1	24.2	2.94	0.47
9 D	71	66	63	7.6	4.4	10.5	19.7	24.6	2.63	0.43
10 D	73	70	65	4.3	6.2	11.4	19.0	24.7	2.50	0.41
11 D	66	65	53	1.5	18.3	18.2	17.6	23.6	2.36	0.40
12 D	71	68	57	5.7	15.9	24.5	19.4	25.8	2.56	0.42
0 D	72	68	60	5.1	12.1	18.1	18.1	23.6	24.6	0.42

TABLE 23-4D-CII. Birds, Mortality, Feed Use, Cost, and Income Data

		Number of Birds		Mortality		Feed Consumed				Value per Pullet Housed										
		At One Week Housed		At End of Test		% 8-147 Days		% 148-497 Days		Ave. Days Lost Hen Housed		Per Bird 1-147 Days								
												Per 100 Bird Days								
										Per Lb. of Eggs		Per Dozen Eggs								
										Chick Cost		Growing Feed Cost								
										Laying Feed Cost		Total Feed and Chick Cost								
										Value of Eggs		Value of Meat								
										IOFCC										
-19-		Entry No.		Type Cage																
1	D	1	S	207	204	172	2.2	14.7	34.8	16.9	23.4	2.38	3.67	0.41	1.56	7.68	9.65	10.66	0.34	1.358
2	D	2	S	208	204	176	1.6	13.1	27.1	17.0	23.5	2.28	3.60	0.40	1.59	7.95	9.94	11.16	0.33	1.538
3	D	3	S	214	210	194	1.3	7.1	16.0	16.5	22.1	2.29	3.57	0.40	1.52	7.83	9.75	10.94	0.35	1.537
4	D	4	S	213	206	189	3.8	7.7	15.0	16.6	23.3	2.37	3.69	0.41	1.57	8.13	10.12	11.17	0.35	1.422
5	S	5	S	212	204	182	4.4	10.6	18.4	17.0	23.6	2.34	3.67	0.41	1.56	8.11	10.09	11.27	0.34	1.531
6	S	6	S	202	194	154	4.2	20.4	38.3	16.3	19.8	2.34	3.52	0.41	1.53	6.65	8.59	8.91	0.22	0.545
7	S	7	S	211	204	175	4.4	13.8	24.8	17.4	23.6	2.41	3.80	0.41	1.63	7.95	10.00	10.55	0.35	0.899
8	S	8	S	213	204	186	4.0	8.7	13.6	17.9	24.4	2.76	4.53	0.41	1.70	8.46	10.57	9.82	0.45	-0.294
9	S	9	S	208	201	174	3.1	13.3	18.6	17.3	25.6	2.47	4.29	0.41	1.66	8.72	10.79	10.99	0.43	0.636
10	S	10	S	217	207	172	5.0	17.0	29.3	17.8	24.5	2.42	3.94	0.42	1.67	8.15	10.24	10.81	0.38	0.952
11	S	11	S	210	200	165	5.9	17.6	41.7	17.2	22.7	2.24	3.44	0.42	1.65	7.33	9.40	10.51	0.30	1.413
12	S	12	S	218	207	178	5.5	13.4	15.3	16.9	23.8	2.42	3.82	0.42	1.57	8.24	10.23	10.99	0.36	1.124
0	S	0	S	211	204	176	3.8	13.1	24.4	17.1	23.4	2.39	3.79	0.41	1.60	7.93	9.95	10.65	0.35	1.055
1	D	1	D	208	202	175	2.6	13.0	33.0	17.4	22.5	2.27	3.56	0.41	1.62	7.42	9.45	10.59	0.35	1.487
2	D	2	D	211	208	182	1.2	12.7	25.5	16.4	21.9	2.27	3.57	0.40	1.52	7.44	9.36	10.41	0.33	1.377
3	D	3	D	214	209	197	2.3	5.6	9.1	16.1	21.2	2.25	3.48	0.40	1.51	7.65	9.57	10.98	0.35	1.769
4	D	4	D	212	206	190	3.1	7.6	10.7	16.4	22.5	2.37	3.72	0.41	1.56	7.95	9.92	10.79	0.35	1.225
5	D	5	D	215	208	182	3.2	12.2	24.0	17.4	22.9	2.30	3.61	0.41	1.61	7.73	9.74	10.91	0.34	1.508
6	D	6	D	207	201	157	2.8	22.3	42.8	16.4	19.9	2.39	3.55	0.41	1.53	6.60	8.54	8.67	0.22	0.359
7	D	7	D	213	204	171	3.2	15.5	30.8	17.5	23.1	2.48	3.92	0.41	1.62	7.67	9.70	9.87	0.34	0.509
8	D	8	D	222	207	190	7.7	7.9	13.1	18.4	23.2	2.75	4.53	0.43	1.72	8.24	10.40	9.66	0.46	-0.277
9	D	9	D	207	197	181	5.5	8.0	17.6	17.8	24.8	2.51	4.35	0.42	1.71	8.46	10.58	10.39	0.46	0.268
10	D	10	D	218	210	195	4.1	6.5	14.3	18.4	23.5	2.39	3.90	0.41	1.72	8.15	10.28	10.99	0.42	1.128
11	D	11	D	201	196	163	2.2	17.1	29.3	17.4	23.3	2.39	3.68	0.40	1.64	7.82	9.87	10.47	0.31	0.908
12	D	12	D	211	205	182	3.2	10.8	20.6	17.3	23.6	2.41	3.79	0.41	1.60	8.01	10.01	10.57	0.36	0.915
0	D	0	D	212	204	180	3.4	11.6	22.6	17.2	22.7	2.40	3.80	0.41	1.61	7.76	9.78	10.36	0.36	0.931

TABLE 23-4A-SII. Birds, Mortality, Feed Use, Cost, and Income Data

Entry No.	Type Cage	At One Week	At End of Test	Housed	% 8-147 Days	% 148-497 Days	Ave. Days Lost/House	Bird Days per 100	Bird Days per 100	Chick Cost	Growth Feed Cost	Laying Feed Cost	Total Feed and Chick Cost	Value of Eggs	Value of Meat	IOFCC			
1 3	48	0.0	20.0	58.9	15.3	22.7	2.39	3.64	0.40	1.41	6.90	8.72	9.49	0.32	1.088				
2 3	60	2.1	11.7	25.8	15.5	23.0	2.33	3.67	0.40	1.42	7.93	9.75	10.72	0.34	1.309				
3 3	59	1.7	1.7	2.8	15.6	21.4	2.35	3.53	0.40	1.42	8.00	9.82	10.84	0.38	1.396				
4 3	56	2.1	1.9	0.0	15.4	23.0	2.53	3.87	0.40	1.42	8.49	10.32	10.78	0.39	0.846				
5 3	64	60	7.2	15.0	32.8	16.8	2.40	3.64	0.43	1.54	7.62	9.59	10.47	0.32	1.205				
6 3	62	60	3.4	16.7	35.1	15.5	18.5	2.38	3.47	0.41	1.46	6.34	8.20	8.33	0.23	0.359			
7 3	63	60	3.1	11.7	23.9	16.6	22.4	2.39	3.72	0.41	1.57	7.70	9.68	10.27	0.34	0.928			
8 3	62	60	3.7	2.2	3.3	16.9	22.4	2.60	4.18	0.41	1.58	8.12	10.12	9.97	0.47	0.328			
9 3	60	60	57	0.0	6.4	15.5	23.9	2.37	4.00	0.40	1.40	8.48	10.28	11.34	0.48	1.536			
10 3	61	60	53	1.7	11.7	25.9	17.2	22.8	2.26	3.62	0.40	1.58	7.75	9.73	11.07	0.40	1.737		
11 3	61	50	2.2	19.6	45.9	16.6	21.9	2.21	3.35	0.40	1.55	7.03	8.98	10.16	0.29	1.467			
12 3	62	60	3.6	13.3	20.1	15.8	22.7	2.38	3.68	0.41	1.42	7.89	9.72	10.40	0.35	1.034			
0 3	62	60	53	2.7	11.0	23.6	16.1	22.3	2.38	3.70	0.41	1.48	7.69	9.58	10.32	0.36	1.103		
1 4	82	82	64	2.1	20.8	60.9	15.9	22.6	2.47	3.76	0.41	1.45	6.19	8.67	8.95	0.31	0.585		
2 4	80	77	58	3.3	24.7	63.9	15.6	21.0	2.17	3.32	0.41	1.46	6.37	8.24	9.36	0.27	1.393		
3 4	81	80	71	1.2	11.2	30.4	15.6	19.2	2.26	3.37	0.40	1.39	6.66	8.45	9.27	0.32	1.139		
4 4	82	81	75	1.5	7.3	15.8	15.2	20.6	2.32	3.46	0.40	1.41	7.26	9.08	10.20	0.33	1.444		
5 4	77	72	62	6.5	14.1	27.4	16.5	22.7	2.38	3.67	0.42	1.52	7.68	9.62	10.33	0.32	1.025		
6 4	77	76	55	1.4	29.1	61.4	17.5	18.9	2.46	3.55	0.40	1.59	5.89	7.89	7.40	0.20	-0.284		
7 4	83	80	63	3.5	21.2	47.6	16.3	21.9	2.48	3.84	0.41	1.51	7.00	8.92	8.80	0.31	0.200		
8 4	83	81	55	3.0	7.4	9.0	17.1	22.9	2.79	4.48	0.41	1.57	8.17	10.15	9.40	0.44	-0.300		
9 4	80	80	66	0.0	15.0	24.3	14.8	24.4	2.47	4.22	0.40	1.53	8.20	10.12	10.27	0.42	0.560		
10 4	80	72	70	59	2.2	15.7	45.1	17.7	22.6	2.32	3.48	0.40	1.64	7.23	9.27	10.07	0.30	1.100	
11 4	72	79	70	2.1	11.4	19.4	15.5	22.4	2.43	3.74	0.40	1.42	7.75	9.58	10.16	0.34	0.920		
12 4	80	78	66	2.2	16.1	36.8	16.3	21.8	2.41	3.73	0.40	1.51	7.21	9.13	9.52	0.33	0.710		

TABLE 23-4B-SII. Birds, Mortality, Feed Use, Cost, and Income Data

TABLE 23-4C-SII. Birds, Mortality, Feed Use, Cost, and Income Data

Entry No.	Type Cage	At One Week	At End of Test	Number of Birds	Mortality	Feed Consumed	Value Per Pullet Housed			IOFC
							Chick Cost	Growing Feed Cost	Laying Feed Cost	
1	4	73	60	54	7.5	10.0	18.8	24.5	3.79	0.42
2	4	62	60	53	2.9	11.7	13.0	23.6	2.29	0.41
3	3	64	60	58	5.6	3.3	1.1	17.3	22.7	0.42
4	3	71	60	54	15.0	10.0	11.7	17.0	24.3	0.47
5	3	62	60	57	2.9	5.0	7.2	17.6	24.7	0.41
6	3	63	60	46	4.6	23.3	45.6	16.6	21.3	2.37
7	3	64	60	56	7.1	6.7	13.2	17.8	24.5	2.37
8	3	69	60	54	14.0	10.0	17.8	19.9	25.8	2.88
9	3	65	60	56	7.5	6.7	16.9	20.2	26.0	2.59
10	3	65	60	55	6.9	8.3	13.8	18.2	24.9	2.46
11	3	65	60	49	8.2	18.3	32.8	18.1	23.1	2.29
12	3	67	60	55	12.9	8.3	13.3	19.5	24.7	2.44
0	3	65	60	54	7.9	10.1	17.1	18.2	24.2	2.42
1	4	73	60	0.0	17.8	34.7	17.3	23.4	2.29	3.62
2	4	80	70	0.2	12.5	21.0	17.4	22.9	2.38	3.78
3	4	81	80	1.4	8.8	16.4	17.4	23.0	2.33	3.67
4	4	79	70	0.4	11.4	17.4	17.3	23.5	2.43	3.85
5	4	81	80	70	1.5	12.5	25.3	17.6	24.0	2.41
6	4	71	69	54	2.9	21.7	42.2	15.7	19.9	2.32
7	4	79	78	64	2.0	17.9	27.2	18.0	23.7	2.62
8	4	81	75	66	7.8	12.3	16.4	18.0	24.6	2.98
9	4	76	71	68	6.9	4.2	7.3	19.5	25.8	2.67
10	4	84	80	67	4.7	16.2	26.7	18.6	23.3	2.37
11	4	72	70	61	2.6	12.9	13.5	16.6	23.9	2.37
12	4	80	77	59	3.8	23.3	27.4	17.8	25.4	2.53
0	4	78	76	65	2.8	14.3	23.0	17.6	23.6	2.47

TABLE 23-4D-SII. Birds, Mortality, Feed Use, Cost, and Income Data

Number of Birds	Mortality	Feed Consumed	Ave. Days Lost/Hen Housed	Per Bird 1-147 Days	Per 100 Bird Days	Per Lb. of Eggs	Per Dozen Eggs	Chick Cost	Growing Feed Cost	Laying Feed Cost	Total Feed and Chick Cost	Value of Eggs	Value of Meat	Entry No.			
														Type Cage			
At One Week Housed	At End of Test	% 8-147 Days	% 148-497 Days	Value Per Pullet Housed	IOPCC												
1 3	187	179	159	3.7	11.1	28.0	17.6	23.2	2.33	3.62	0.41	1.64	7.80	9.86	10.93	0.36	1.436
2 3	179	175	156	1.6	10.9	19.3	16.9	23.5	2.29	3.63	0.40	1.57	8.15	10.12	11.29	0.34	1.516
3 3	184	179	172	2.4	3.9	6.2	16.4	22.1	2.26	3.53	0.41	1.53	8.03	9.96	11.41	0.38	1.828
4 3	188	176	167	6.2	5.1	5.2	16.5	23.5	2.40	3.77	0.42	1.57	8.45	10.44	11.40	0.38	1.338
5 3	189	180	164	4.8	8.9	17.1	17.3	23.5	2.32	3.63	0.42	1.60	8.11	10.13	11.43	0.35	1.650
6 3	189	180	143	4.7	20.6	37.1	16.4	20.0	2.35	3.54	0.42	1.55	6.74	8.70	8.93	0.23	0.456
7 3	191	180	161	5.3	10.6	19.5	17.5	23.9	2.40	3.83	0.42	1.64	8.21	10.27	10.88	0.36	0.979
8 3	193	180	170	6.8	5.6	8.7	18.5	24.1	2.67	4.37	0.43	1.73	8.46	10.62	10.22	0.48	0.076
9 3	189	179	163	5.5	8.9	13.4	18.0	25.2	2.45	4.24	0.42	1.69	8.70	10.81	11.13	0.46	0.789
10 3	190	177	160	7.0	9.8	18.1	18.0	24.6	2.42	3.95	0.43	1.69	8.43	10.55	11.24	0.42	1.105
11 3	193	181	150	6.4	17.7	39.0	17.2	22.9	2.28	3.52	0.42	1.64	7.45	9.52	10.46	0.31	1.253
12 3	190	180	162	6.0	10.0	18.1	17.6	23.6	2.37	3.73	0.42	1.62	8.10	10.14	11.04	0.38	1.271
0 3	188	179	161	5.0	10.2	19.1	17.3	23.3	2.38	3.78	0.42	1.62	8.05	10.09	10.86	0.37	1.141
1 4	228	227	188	1.1	16.6	39.7	16.7	22.6	2.32	3.61	0.40	1.54	7.30	9.24	10.32	0.33	1.408
2 4	240	237	202	1.2	14.9	33.3	16.5	21.8	2.27	3.54	0.40	1.54	7.25	9.19	10.27	0.32	1.400
3 4	244	240	219	1.2	8.8	18.9	16.2	21.3	2.28	3.52	0.40	1.50	7.46	9.35	10.50	0.33	1.478
4 4	237	236	212	0.7	10.2	20.6	16.5	22.2	2.34	3.64	0.40	1.56	7.64	9.60	10.56	0.34	1.309
5 4	238	232	200	2.8	13.9	25.3	17.1	23.0	2.32	3.64	0.41	1.56	7.73	9.70	10.76	0.33	1.389
6 4	220	215	168	2.3	22.2	44.1	16.3	19.7	2.37	3.53	0.41	1.51	6.51	8.42	8.65	0.22	0.447
7 4	233	228	185	2.3	18.8	36.1	17.5	22.8	2.49	3.88	0.40	1.61	7.41	9.43	9.53	0.32	0.429
8 4	242	231	206	4.9	11.1	18.0	17.9	24.1	2.84	4.69	0.42	1.70	8.24	10.34	9.27	0.43	-0.647
9 4	226	192	3.1	12.3	22.8	17.1	25.3	2.54	4.41	0.41	1.68	8.48	10.56	10.24	0.43	0.115	
10 4	245	240	207	2.1	13.8	25.6	18.2	23.4	2.40	3.89	0.40	1.70	7.87	9.97	10.56	0.38	0.975
11 4	219	215	178	1.8	32.0	17.4	23.2	2.34	3.60	0.40	1.64	7.70	9.75	10.51	0.30	1.068	
12 4	239	232	198	2.8	14.2	17.8	16.7	23.8	2.46	3.88	0.41	1.54	8.15	10.10	10.53	0.33	0.769
0 4	234	229	196	2.2	14.5	27.8	17.0	22.8	2.41	3.82	0.40	1.59	7.64	9.64	10.14	0.34	0.885

TABLE 23-4A-CIII. Egg Quality Data

Entry No.	Cage Type	% Inclusions (Breakout)	Candled Quality Percentages		Haugh Units		Shell Score (Specific Gravity)		Average
			Large Bloods	Small Bloods	Large Meats	Small Meats	Large Eggs	Small Eggs	
1 S	S	2.8	1.5	1.1	0.0	0.4	95.7	0.8	2.6
2 S	D	1.2	1.2	1.6	0.3	1.5	97.9	0.2	0.8
3 S	D	1.7	1.1	0.6	0.0	0.6	96.5	0.2	0.0
4 S	S	1.8	0.9	0.3	0.3	0.6	97.1	0.9	0.0
5 S	S	2.6	0.9	1.6	0.3	0.0	95.3	0.9	0.0
6 S	S	4.4	1.3	1.2	0.0	0.0	92.1	1.4	0.0
7 S	S	2.7	1.1	1.6	0.3	0.9	95.0	1.2	0.0
8 S	S	2.5	0.9	1.1	7.4	8.6	95.3	0.4	0.0
9 S	S	2.0	0.0	2.5	9.2	10.8	96.7	0.2	0.0
10 S	S	1.4	0.9	2.4	12.0	21.8	97.8	0.0	0.0
11 S	S	2.4	0.6	0.3	0.9	2.1	95.5	1.0	0.0
12 S	S	3.5	2.6	1.2	0.3	0.0	95.1	0.2	0.0
0 S	S	2.4	1.1	13.	2.6	3.9	95.8	0.6	0.0
1 D	D	1.6	1.6	0.9	0.3	0.3	97.7	0.4	0.0
2 D	D	2.7	1.6	1.0	0.3	0.0	95.0	1.2	0.0
3 D	D	1.4	0.3	0.0	0.0	0.6	97.2	0.7	0.0
4 D	D	2.4	0.7	1.3	0.0	0.7	96.5	0.5	0.0
5 D	D	2.1	0.6	0.6	0.0	0.0	95.9	1.4	0.2
6 D	D	2.2	0.3	0.4	0.4	0.4	95.6	2.2	0.0
7 D	D	3.1	0.6	1.9	0.3	0.9	94.9	1.4	0.0
8 D	D	1.6	0.9	2.7	8.7	12.9	97.4	0.7	0.0
9 D	D	2.3	0.7	2.0	12.7	14.2	96.6	0.2	0.0
10 D	D	2.0	0.9	1.6	14.9	17.1	97.0	0.0	0.0
11 D	D	3.1	2.6	0.7	0.3	0.0	94.7	0.8	0.0
12 D	D	4.3	3.9	2.9	0.0	0.0	94.2	0.7	0.0
0 D	D	2.4	1.2	1.3	3.2	3.9	96.0	0.9	0.0
									2.79
									1.74
									2.49
									2.40

TABLE 23-4B-CIII. Egg Quality Data

Entry No.	Cage Type	Loss % (Downgrades)										Haugh Units	Shell Score (Specific Gravity)								
		% Inclusions (Breakout)	Candled Quality Percentages			Haugh Units				A or Better	B	C Quality	Chex and Cracks	Loss Eggs							
		Large Bloods	Small Bloods	Large Meats	Small Meats	A or Better	B	C Quality	Chex and Cracks	Loss Eggs	October	January	April	June	Average	November	February	April	August	Average	
1	S	1.8	1.1	0.8	0.0	0.0	96.9	0.5	0.0	2.5	0.2	79.1	80.4	80.5	80.2	3.37	2.29	2.85	0.72	2.31	
2	S	2.6	0.6	1.2	0.0	0.3	95.8	0.8	0.0	3.0	0.4	82.5	83.3	80.5	84.1	82.6	3.35	1.80	3.26	1.38	2.45
3	S	1.4	1.7	0.9	0.0	0.5	97.4	0.6	0.0	2.0	0.0	82.6	79.0	75.8	79.5	79.2	3.34	1.97	3.22	0.98	2.38
4	S	2.2	0.9	0.5	0.3	0.0	96.1	1.1	0.0	2.2	0.5	83.7	83.0	80.2	82.8	82.4	4.30	3.43	4.18	1.58	3.37
5	S	3.3	0.3	0.9	0.0	0.0	94.1	2.7	0.0	3.0	0.2	85.3	84.7	79.1	86.5	83.9	3.41	2.58	4.01	0.97	2.74
6	S	2.9	1.3	1.3	0.0	0.3	94.1	3.0	0.0	2.7	0.2	80.1	79.6	78.2	77.7	78.9	3.06	1.39	2.88	0.97	2.07
7	S	3.9	0.9	0.0	0.0	0.0	93.1	2.1	0.0	4.4	0.4	85.7	82.4	75.5	84.2	81.9	3.10	1.19	2.17	0.78	1.81
8	S	2.6	1.0	4.3	6.5	15.0	96.2	0.3	0.0	2.9	0.6	86.4	81.0	78.2	79.7	81.3	2.36	0.62	2.79	0.65	1.60
9	S	1.7	2.3	1.2	9.0	13.6	97.2	0.5	0.0	2.1	0.2	89.2	89.2	84.3	85.2	87.0	2.26	0.69	2.72	0.93	1.65
10	S	2.3	0.8	2.6	15.1	18.6	96.4	0.0	0.0	3.0	0.6	78.7	82.6	81.9	85.6	82.2	2.23	0.64	2.94	0.32	1.53
11	S	4.0	2.7	0.9	0.0	0.9	92.6	3.0	0.0	4.1	0.3	82.0	77.6	75.5	81.3	79.1	3.41	1.94	3.35	0.85	2.39
12	S	3.6	2.1	1.5	0.0	0.3	94.4	0.6	0.1	3.8	1.0	81.8	82.3	80.0	83.9	82.0	2.78	1.32	2.55	0.74	1.85
0	S	2.7	1.3	1.3	2.6	4.1	95.4	1.3	0.0	3.0	0.4	83.1	82.1	79.1	82.6	81.7	3.08	1.65	3.08	0.90	2.18
1	D	3.0	0.6	0.9	0.0	0.0	95.8	0.5	0.0	2.8	0.9	80.8	78.6	77.4	78.1	78.7	3.39	2.08	3.37	1.42	2.57
2	D	3.0	1.2	1.2	0.0	0.0	95.2	0.5	0.0	4.0	0.3	79.7	83.0	78.8	84.0	81.4	3.04	1.67	3.22	1.16	2.27
3	D	1.2	0.6	0.0	0.3	0.9	97.9	0.5	0.0	1.7	0.0	81.7	81.1	75.3	77.4	78.9	3.54	2.82	3.66	1.53	2.89
4	D	3.0	1.8	0.6	0.3	0.3	95.5	0.5	0.0	3.2	0.8	86.6	78.8	82.2	83.9	82.9	4.43	3.13	4.10	2.02	3.42
5	D	2.3	1.1	0.3	0.0	0.0	96.4	0.9	0.0	2.3	0.5	88.1	83.0	81.2	84.1	84.1	3.44	2.64	4.08	1.67	2.96
6	D	3.4	0.7	1.4	0.3	0.4	93.4	3.7	0.0	2.1	0.7	79.5	78.3	76.0	80.2	78.5	3.09	2.01	3.07	1.48	2.41
7	D	2.7	0.3	1.0	0.0	0.3	95.5	1.5	0.0	3.0	0.0	84.2	82.4	84.3	82.2	83.3	2.76	1.52	2.53	1.00	1.95
8	D	2.1	1.0	3.7	6.8	10.8	96.7	0.4	0.0	2.6	0.4	85.7	79.5	75.4	84.3	81.2	2.10	1.19	2.01	0.70	1.50
9	D	4.0	1.1	2.2	6.9	6.5	94.0	0.4	0.0	4.6	1.0	90.0	87.0	82.0	86.8	86.5	1.94	1.15	2.43	0.46	1.49
10	D	0.6	1.2	4.9	12.9	14.1	99.0	0.0	0.0	1.0	0.0	86.8	80.8	82.7	84.4	83.7	2.34	1.10	2.70	0.76	1.73
11	D	2.4	0.3	0.6	0.9	95.6	1.1	0.4	3.0	0.0	82.0	79.6	78.5	85.1	81.3	2.80	2.04	2.44	1.12	2.10	
12	D	3.9	2.5	1.5	0.3	0.0	94.2	1.0	0.0	3.7	1.1	81.0	81.1	78.9	82.5	80.9	2.49	1.75	3.11	1.54	2.22
0	D	2.6	1.0	1.5	2.3	2.9	95.8	0.9	0.0	2.8	0.5	83.9	81.1	79.4	82.8	81.8	2.95	1.92	3.06	1.24	2.29

TABLE 23-4C-CIII. Egg Quality Data

Entry No.	Cage Type	Loss % (Downgrades)	% Inclusions (Breakout)		Candled Quality Percentages		Haugh Units		Shell Score (Specific Gravity)			
			Large Bloods	Small Bloods	Large Meats	Small Meats	C or Better	A	January	February	March	April
1 S	1.2	1.0	1.2	0.3	0.0	98.1	0.5	0.0	82.2	86.8	78.9	84.7
2 S	2.5	0.3	1.4	0.0	0.6	96.3	0.5	0.0	83.4	84.6	82.5	83.2
3 S	2.1	0.8	0.8	0.0	0.7	96.7	0.7	0.0	80.7	79.2	75.6	77.2
4 S	2.4	1.2	1.2	0.6	0.3	96.3	0.5	0.1	87.7	85.8	83.0	84.7
5 S	1.9	1.2	0.9	0.0	0.0	96.6	1.8	0.2	1.1	0.3	82.0	87.2
6 S	2.2	0.3	0.7	0.3	0.0	96.1	0.7	0.0	2.9	0.2	84.0	83.1
7 S	4.3	0.3	1.2	0.0	0.0	93.5	1.3	0.0	4.5	0.7	87.2	87.1
8 S	2.8	2.5	4.2	6.0	11.0	95.3	0.6	0.0	3.9	0.2	85.7	86.8
9 S	2.0	1.8	3.1	11.0	9.2	97.0	0.0	0.2	2.7	0.2	89.8	89.8
10 S	2.0	2.2	3.3	15.0	14.7	96.6	0.5	0.0	2.9	0.0	82.3	82.4
11 S	3.2	0.3	1.0	0.0	0.3	94.5	0.9	0.4	3.9	0.3	83.4	82.7
12 S	2.1	2.4	0.3	1.1	1.5	96.4	0.9	0.0	2.1	0.6	84.4	82.9
0 S	2.4	1.2	1.6	2.9	3.2	96.1	0.8	0.1	2.7	0.3	84.4	84.9
1 D	3.7	1.7	2.3	0.0	0.0	94.0	0.8	0.0	4.5	0.7	81.9	83.4
2 D	4.8	0.6	1.1	0.0	0.3	92.8	0.3	0.0	6.2	0.7	81.9	81.4
3 D	2.1	0.0	0.8	0.6	0.0	96.7	0.6	0.0	2.6	0.1	81.5	80.2
4 D	2.8	0.9	0.6	0.0	0.0	95.7	0.3	0.0	3.3	0.6	84.5	85.6
5 D	4.4	1.4	1.2	0.3	0.6	93.4	1.2	0.0	4.8	0.7	81.5	82.6
6 D	4.0	1.0	0.7	0.6	0.4	93.4	3.6	0.0	2.4	0.6	81.9	80.2
7 D	4.1	0.9	0.6	0.0	0.3	92.7	2.0	0.0	5.0	0.4	83.7	86.2
8 D	1.7	3.9	5.3	5.0	14.2	97.4	0.2	0.0	2.0	0.3	85.5	82.3
9 D	2.6	2.1	5.3	7.0	16.2	96.4	0.0	0.0	3.2	0.3	91.0	88.6
10 D	2.3	3.0	7.3	10.0	12.9	96.3	0.2	0.0	3.4	0.2	82.0	83.2
11 D	4.6	1.5	1.2	0.0	0.6	92.8	2.1	0.0	4.6	0.5	83.2	81.9
12 D	5.6	2.4	1.2	0.0	0.3	90.8	1.2	0.3	6.9	0.8	85.3	84.8
0 D	3.6	1.6	2.3	1.9	3.8	94.3	1.0	0.0	4.1	0.5	83.7	83.4
-26-											Average	
August											2.56	
April											2.28	
November											2.32	
February											3.25	
March											2.58	
April											3.05	
May											2.36	
June											2.30	

TABLE 23-4D-CIII. Egg Quality Data

	Entry No.	Cage Type	Haugh Units						Shell Score (Specific Gravity)		
			% Inclusions (Breakout)	Candled Quality Percentages							
			Large Bloods	Small Bloods	Large Meats	Small Meats	A or Better	B	C Quality	Chex and Cracks	Loss Eggs
									October	January	
									April	June	
									Average		
									November	February	
									April	August	
									Average		
1	D	2.7	1.3	1.4	0.1	0.1	95.8	0.6	82.0	81.0	78.5
2	D	3.5	1.1	1.1	0.1	0.1	94.3	0.7	82.5	80.2	84.8
3	D	1.6	0.3	0.3	0.3	0.6	97.3	0.6	80.2	82.3	82.3
4	D	2.7	1.1	0.8	0.1	0.3	95.9	0.5	80.4	79.4	75.3
5	D	2.9	1.0	0.7	0.1	0.2	95.2	1.1	81.3	76.9	78.0
6	D	3.2	0.7	0.8	0.4	0.4	94.1	3.2	81.3	79.2	77.2
7	D	3.3	0.6	1.2	0.1	0.5	94.4	1.6	85.1	84.8	84.8
8	D	1.8	1.9	3.9	6.8	12.7	97.1	0.4	81.0	84.0	85.1
9	D	3.0	1.3	3.2	8.9	12.3	95.7	0.2	82.3	81.2	80.5
10	D	1.6	1.7	4.6	12.5	14.7	97.4	0.1	83.0	81.2	85.2
11	D	3.4	1.5	0.8	0.1	0.5	94.3	1.3	82.8	81.3	80.5
12	D	4.6	2.9	1.9	0.1	0.1	93.1	0.9	84.6	82.7	81.9
0	D	2.9	1.3	1.7	2.5	3.5	95.4	0.9	83.7	82.2	79.9

TABLE 23-4A-SIII. Egg Quality Data

Entry No.	Cage Type	Loss % (Downgrades)	% Inclusions (Breakout)		Candled Quality Percentages		Haugh Units		Shell Score (Specific Gravity)												
			Large Bloods	Small Bloods	Large Meats	Small Meats	A or Better	B	October	November	December	January	February	March	April	May	June	July	August	Average	Average
1	3	1.1	1.4	0.3	0.0	0.3	98.0	0.7	0.0	0.9	0.4	79.3	79.8	82.0	80.3	80.3	3.20	2.18	2.59	2.57	2.64
2	3	2.0	1.7	1.6	0.3	0.3	96.4	0.7	0.0	2.5	0.4	80.0	83.3	82.8	82.2	82.8	2.84	1.78	2.60	2.10	2.33
3	3	1.5	1.0	0.3	0.0	0.6	97.1	0.0	0.0	2.7	0.2	76.5	80.3	77.2	71.0	76.2	2.75	2.35	2.83	3.08	2.75
4	3	2.0	1.6	1.0	0.0	1.0	97.0	0.8	0.0	1.3	0.9	82.8	86.5	82.1	85.5	84.3	4.34	2.85	2.69	2.77	3.16
5	3	1.3	0.3	1.3	0.3	0.0	97.3	0.8	0.0	1.7	0.2	82.7	83.0	81.7	81.5	82.2	3.78	2.55	3.11	3.42	3.21
6	3	3.1	0.7	0.4	0.4	0.4	94.0	2.5	0.0	2.8	0.7	81.8	80.0	77.2	77.2	79.0	3.12	2.21	2.51	2.24	2.52
7	3	1.3	0.0	2.2	0.6	1.6	97.3	1.0	0.0	1.7	0.0	86.3	85.7	85.0	82.5	84.9	2.46	1.79	1.98	1.80	2.01
8	3	2.2	0.3	0.3	10.3	10.0	96.0	0.4	0.0	3.6	0.0	86.3	82.0	82.0	78.1	82.1	2.30	0.94	2.20	1.91	1.84
9	3	1.6	0.7	2.4	12.2	11.0	97.5	0.2	0.0	2.0	0.4	86.5	87.4	86.2	84.7	86.2	1.90	0.73	2.10	1.67	1.60
10	3	1.1	1.0	2.3	11.2	17.5	98.1	0.0	0.0	1.9	0.0	78.2	81.2	82.0	81.5	80.7	2.04	0.82	2.48	1.61	1.74
11	3	2.3	0.3	0.7	0.3	0.3	95.4	1.2	0.0	3.0	0.4	81.7	82.6	82.5	80.8	81.9	3.21	2.03	2.37	1.93	2.39
12	3	4.0	5.1	2.4	0.3	0.0	94.9	0.6	0.0	2.4	2.2	83.5	81.2	80.3	79.6	81.2	2.78	1.76	2.33	1.74	2.15
0	3	2.0	1.2	1.3	3.0	3.6	96.6	0.7	0.0	2.2	0.5	82.1	82.8	81.7	80.4	81.8	2.89	1.83	2.48	2.24	2.36
1	4	3.3	1.7	1.7	0.3	0.3	95.4	0.5	0.0	2.7	1.4	82.2	83.0	80.9	75.7	80.4	3.27	2.11	2.62	3.21	2.80
2	4	2.0	1.2	0.9	0.3	1.1	96.4	0.7	0.0	2.7	0.2	81.7	85.0	82.1	83.6	83.1	3.29	1.91	2.60	2.37	2.54
3	4	1.6	0.3	0.3	0.0	0.6	96.6	0.9	0.0	2.2	0.4	79.5	76.8	75.3	74.7	76.6	2.82	1.92	2.79	2.73	2.56
4	4	2.1	0.0	0.6	0.3	0.3	96.5	0.6	0.0	2.2	0.6	82.7	81.6	80.7	82.1	81.8	3.65	2.50	3.48	3.04	3.17
5	4	3.5	1.2	0.9	0.0	0.0	93.9	1.5	0.2	4.1	0.4	83.0	84.7	82.4	82.4	83.1	3.70	2.43	2.99	2.87	3.00
6	4	3.4	0.9	1.2	0.0	0.0	93.8	1.2	0.0	4.4	0.6	83.2	82.4	78.8	76.2	80.1	2.72	2.14	2.88	2.20	2.48
7	4	4.4	1.7	1.2	0.0	0.3	92.6	1.6	0.0	5.0	0.8	83.8	83.3	80.1	82.4	82.4	2.82	1.73	2.25	2.54	2.34
8	4	1.9	1.4	3.5	5.8	11.5	96.7	0.7	0.0	2.6	0.0	81.9	80.5	80.5	78.8	80.4	2.33	1.05	2.32	2.29	2.00
9	4	2.7	0.0	2.1	9.7	13.9	95.8	0.2	0.0	3.6	0.5	86.3	87.5	84.9	79.5	84.6	1.63	0.72	1.96	1.72	1.51
10	4	2.3	0.9	1.7	15.6	21.4	96.7	0.0	0.0	2.4	0.9	81.5	82.1	82.0	82.6	82.0	2.25	1.27	2.30	1.63	1.86
11	4	3.2	2.8	0.3	0.9	1.7	94.7	0.5	0.0	4.2	0.5	82.3	82.1	82.4	83.6	82.6	3.34	1.94	1.90	2.14	2.33
12	4	3.8	1.4	1.6	0.0	0.0	94.4	0.3	0.0	4.2	1.1	80.6	77.5	79.3	77.1	78.6	2.40	1.78	2.77	2.51	2.36
0	4	2.8	1.1	1.3	2.7	4.3	95.3	0.7	0.0	3.3	0.6	82.4	82.2	80.8	79.9	81.3	2.85	1.79	2.57	2.44	2.41

TABLE 23-4B-SIII. Egg Quality Data

Entry No. Cage Type	Haugh Units												Shell Score (Specific Gravity)									
	Candled Quality Percentages						Haugh Units															
	% Inclusions (Breakout)		Large Bloods		Small Bloods		Large Meats		Small Meats		A or Better											
													October	January								
													April	June								
													Average	November								
													February	April								
													August	Average								
-29-	1	3	2.7	0.9	0.0	0.0	0.0	96.0	0.5	0.0	2.9	0.5	80.8	79.0	77.2	76.5	78.4	3.52	2.19	2.98	0.99	2.42
	2	3	3.2	0.9	1.9	0.0	0.0	95.1	0.7	0.0	3.7	0.6	82.2	82.1	79.7	84.0	82.0	3.10	1.81	3.02	1.00	2.23
	3	3	1.1	1.0	0.3	0.3	0.3	98.0	0.4	0.0	1.6	0.0	81.8	79.2	74.1	81.9	79.2	3.32	2.56	3.68	1.26	2.70
	4	3	2.8	1.6	0.6	0.6	0.3	95.5	1.0	0.0	2.8	0.7	83.4	83.2	81.9	82.6	82.8	4.46	2.93	4.05	1.53	3.24
	5	3	2.5	0.6	0.9	0.0	0.0	96.0	1.3	0.0	2.2	0.5	87.1	84.4	81.9	83.5	84.2	3.76	2.45	4.18	1.30	2.92
	6	3	3.2	1.4	1.4	0.0	0.4	93.4	4.0	0.0	2.1	0.4	81.1	82.2	77.2	82.9	80.8	2.99	1.59	2.75	1.20	2.13
	7	3	3.0	0.9	0.3	0.0	0.0	94.9	1.5	0.0	3.4	0.2	85.6	83.6	77.0	80.8	81.8	2.60	1.33	2.45	0.40	1.70
	8	3	2.4	1.8	3.5	7.4	11.6	96.4	0.0	0.0	2.9	0.8	86.0	78.1	80.9	78.8	81.0	2.33	0.99	2.58	0.79	1.67
	9	3	1.8	1.7	1.0	6.1	10.0	97.2	0.0	0.0	2.6	0.2	91.1	86.9	83.7	87.4	87.3	2.03	0.94	2.53	0.77	1.57
	10	3	1.8	0.6	4.3	15.3	17.9	97.1	0.0	0.0	2.5	0.4	81.5	81.8	82.3	85.4	82.8	2.14	0.71	2.53	0.45	1.46
	11	3	2.3	1.9	1.0	0.0	1.0	95.3	2.5	0.4	1.8	0.0	81.3	81.0	79.8	86.2	82.1	3.25	1.87	2.41	1.29	2.20
	12	3	2.6	2.2	1.3	0.3	0.0	96.0	0.4	0.0	2.9	0.7	79.8	82.5	80.3	83.1	81.5	2.83	1.51	2.40	1.11	1.96
	0	3	2.4	1.3	1.4	2.5	3.5	95.9	1.0	0.0	2.6	0.4	83.5	82.0	79.7	82.8	82.0	3.03	1.74	2.96	1.01	2.18
	1	4	2.1	0.8	1.7	0.0	0.0	96.8	0.5	0.0	2.3	0.5	79.1	80.0	80.7	81.8	80.4	3.23	2.18	3.25	1.15	2.45
	2	4	2.3	0.8	0.6	0.0	0.3	96.0	0.6	0.0	3.3	0.2	79.9	84.2	79.6	84.1	81.9	3.28	1.66	3.46	1.53	2.48
	3	4	1.5	1.3	0.5	0.0	1.1	97.3	0.7	0.0	2.0	0.0	82.5	80.8	77.0	75.0	78.8	3.56	2.22	3.21	1.26	2.56
	4	4	2.5	1.1	0.5	0.0	0.0	96.1	0.6	0.0	2.5	0.5	86.9	78.5	80.4	84.1	82.5	4.27	3.63	4.24	2.07	3.55
	5	4	3.1	0.8	0.3	0.0	0.0	94.4	2.4	0.0	3.1	0.1	86.4	83.3	78.4	87.0	83.8	3.08	2.77	3.92	1.34	2.78
	6	4	3.1	0.6	1.3	0.3	0.3	94.1	2.6	0.0	2.7	0.5	78.6	75.7	76.9	75.0	76.5	3.16	1.81	3.20	1.26	2.36
	7	4	3.6	0.3	0.6	0.0	0.3	93.7	2.1	0.0	4.0	0.2	84.3	81.1	82.9	85.6	83.5	3.26	1.37	2.26	1.37	2.07
	8	4	2.2	0.3	4.5	6.0	14.2	96.5	0.7	0.0	2.6	0.2	86.1	82.4	72.6	85.2	81.6	2.14	0.81	2.22	0.56	1.43
	9	4	4.0	1.7	2.4	9.8	10.1	94.1	0.9	0.0	4.1	1.0	88.1	89.3	82.7	84.7	86.2	2.16	0.89	2.62	0.61	1.57
	10	4	1.2	1.4	3.2	12.7	14.8	98.3	0.0	0.0	1.6	0.1	84.0	81.6	82.2	84.6	83.1	2.43	1.03	3.12	0.62	1.80
	11	4	4.0	1.1	0.6	0.0	0.9	92.9	1.5	0.0	5.3	0.3	82.8	76.2	74.2	80.2	78.3	2.96	2.11	3.38	0.69	2.28
	12	4	5.0	2.3	1.7	0.0	0.3	92.6	1.2	0.1	4.6	1.5	83.0	80.9	78.5	83.3	81.4	2.43	1.57	3.26	1.17	2.11
	0	4	2.9	1.1	1.5	2.4	3.5	95.2	1.1	0.0	3.2	0.4	83.5	81.2	78.8	82.6	81.5	3.00	1.84	3.18	1.13	2.29

TABLE 23-4C-SIII. Egg Quality Data

Entry No.	Cage Type	Loss % (Downgrades)	% Inclusions (Breakout)		Candled Quality Percentages		Haugh Units		Shell Score (Specific Gravity)											
			Large Bloods	Small Bloods	Large Meats	Small Meats	C Quality	Cracks and Loss Eggs	June	July	August	September	October	November	December	January	February	March	April	Average
1 3	2.8	1.6	0.6	0.0	0.0	95.4	0.5	0.0	3.7	81.4	84.2	79.0	86.5	82.8	3.33	2.32	2.11	2.26	2.50	
2 3	4.4	0.3	0.6	0.0	0.0	93.3	0.3	0.0	5.7	83.1	83.3	81.4	84.6	83.1	3.72	1.72	1.87	2.02	2.33	
3 3	2.2	0.3	0.0	0.6	0.7	96.6	0.4	0.0	2.7	80.2	77.3	77.1	81.0	78.9	3.17	2.32	1.78	2.39	2.41	
4 3	2.2	1.3	0.6	0.3	0.3	96.7	0.2	0.0	2.5	86.0	84.0	83.0	83.5	84.1	4.55	2.77	2.80	2.21	3.08	
5 3	2.9	0.9	0.9	0.0	0.3	95.3	1.6	0.2	2.4	82.3	83.8	81.2	87.4	83.7	3.71	2.06	1.82	2.34	2.48	
6 3	4.0	1.1	0.7	0.3	0.4	93.3	3.1	0.0	3.0	83.9	81.3	80.9	80.2	81.6	4.05	2.20	2.70	2.53	2.87	
7 3	5.0	1.3	1.0	0.0	0.3	91.9	2.0	0.0	5.4	85.0	87.4	84.0	88.9	86.3	3.12	1.43	1.57	1.65	1.94	
8 3	1.5	2.2	4.3	6.4	13.3	97.6	0.2	0.0	2.2	82.6	84.8	80.2	77.7	81.3	2.32	1.02	1.16	1.44	1.48	
9 3	1.8	2.2	4.1	7.5	13.4	97.4	0.0	0.2	2.4	89.5	89.6	85.2	85.8	87.5	2.55	1.08	1.40	1.45	1.62	
10 3	1.9	3.4	4.6	13.2	17.3	96.7	0.4	0.0	2.9	81.6	83.2	81.3	86.0	83.0	2.67	1.20	1.36	1.29	1.63	
11 3	3.4	0.6	1.9	0.0	0.3	94.7	1.3	0.0	3.6	82.8	82.6	83.5	85.8	83.7	3.72	1.86	1.55	2.05	2.30	
12 3	2.3	2.5	1.0	0.0	0.3	96.0	0.5	0.2	2.5	84.3	83.4	78.0	83.0	82.2	2.96	2.05	1.44	1.88	2.08	
0 3	2.9	1.5	1.8	2.4	3.9	95.4	0.9	0.0	3.3	83.6	83.8	81.2	84.2	83.2	3.32	1.84	1.80	1.96	2.23	
1 4	2.0	1.1	2.9	0.3	0.0	96.7	0.8	0.0	2.2	82.8	86.0	79.9	85.8	83.6	3.56	2.17	2.42	2.50	2.66	
2 4	2.9	0.5	1.9	0.0	0.8	95.8	0.5	0.0	3.1	82.2	86.7	82.8	86.9	83.6	3.19	2.14	1.65	2.26	2.31	
3 4	2.0	0.5	1.5	0.0	0.3	96.7	1.0	0.0	2.1	81.9	82.0	77.8	77.4	79.8	3.27	2.17	2.17	2.29	2.35	
4 4	3.0	0.8	0.6	0.0	0.0	95.3	0.6	0.1	3.4	86.2	87.3	83.3	88.3	86.3	4.28	3.18	3.01	3.06	3.38	
5 4	3.4	1.7	1.1	0.3	0.3	94.7	1.4	0.0	3.5	81.2	86.0	80.3	87.5	83.8	3.92	1.93	2.22	2.54	2.65	
6 4	2.2	0.3	0.7	0.6	0.0	96.2	1.3	0.0	2.3	82.0	82.0	77.4	80.0	80.4	3.40	2.47	1.75	2.38	2.50	
7 4	3.4	0.0	0.9	0.0	0.0	94.3	1.3	0.0	4.1	86.0	85.9	85.7	84.5	85.5	2.40	1.12	1.65	1.89	1.76	
8 4	3.0	4.2	5.3	4.5	11.9	95.2	0.6	0.0	3.7	88.6	84.2	81.6	85.8	85.1	2.05	1.01	1.27	1.46	1.45	
9 4	2.8	1.7	4.3	10.5	12.0	96.0	0.0	0.0	3.5	91.2	88.8	85.6	89.9	88.9	1.89	0.62	1.39	1.48	1.35	
10 4	2.3	1.7	6.0	11.6	10.3	96.1	0.3	0.0	3.4	82.8	82.3	74.7	85.0	81.2	2.12	0.90	1.17	1.15	1.33	
11 4	4.4	1.2	0.3	0.0	0.6	92.5	1.7	0.4	4.9	0.5	83.8	82.0	80.6	83.2	82.4	3.28	1.92	1.95	1.97	2.28
12 4	5.4	2.3	0.6	1.1	1.4	91.1	1.5	0.2	6.5	0.8	85.3	84.2	82.8	86.9	84.8	3.21	1.79	1.86	1.92	2.19
0 4	3.1	1.3	2.2	2.4	3.1	95.0	0.9	0.1	3.6	0.4	84.5	84.5	81.0	85.1	83.8	3.05	1.79	1.88	2.08	2.20

TABLE 23-4D-SII. Egg Quality Data

Entry No.	Cage Type	Loss % (Downgrades)										Haugh Units	Shell Score (Specific Gravity)								
		% Inclusions (Breakout)	Candled Quality Percentages	A or Better																	
		Large Bloods	Small Bloods	Large Meats	Small Meats	B	C Quality	Chex and Cracks	Loss Eggs	October	January	April	June	Average	November	February	April	August	Average		
1	3	2.2	1.3	0.3	0.0	0.1	96.5	0.6	0.0	2.5	0.4	80.5	81.0	79.4	81.1	80.5	3.35	2.23	2.56	1.94	2.52
2	3	3.2	1.0	1.4	0.1	0.1	94.9	0.6	0.0	3.9	0.6	81.8	82.9	81.3	83.8	82.4	3.22	1.77	2.50	1.71	2.30
3	3	1.6	0.8	0.2	0.3	0.5	97.2	0.2	0.0	2.3	0.2	79.5	78.9	76.1	78.0	78.1	3.08	2.41	2.76	2.24	2.62
4	3	2.3	1.5	1.0	0.4	0.5	96.4	0.7	0.0	2.2	0.7	84.1	84.6	82.4	83.9	83.7	4.45	2.85	3.18	2.17	3.16
5	3	2.2	0.6	1.0	0.1	0.1	96.2	1.2	0.1	2.1	0.4	84.0	83.8	81.6	84.1	83.4	3.75	2.35	3.03	2.35	2.87
6	3	3.4	1.1	0.8	0.2	0.4	93.6	3.2	0.0	2.6	0.6	82.2	81.1	78.4	80.1	80.5	3.39	2.00	2.66	1.99	2.51
7	3	3.1	0.7	1.2	0.2	0.6	94.7	1.5	0.0	3.5	0.3	85.6	85.6	82.0	84.1	84.3	2.72	1.52	2.00	1.29	1.88
8	3	2.0	1.4	2.7	8.0	11.6	96.6	0.2	0.0	2.9	0.3	85.0	81.7	81.0	78.2	81.5	2.32	0.98	1.98	1.38	1.66
9	3	1.7	1.5	2.5	8.6	11.5	97.3	0.1	0.1	2.3	0.2	89.1	88.0	85.1	85.9	87.0	2.16	0.92	2.01	1.30	1.60
10	3	1.6	1.7	3.7	13.2	17.6	97.3	0.1	0.0	2.4	0.1	80.5	82.1	81.9	84.3	82.2	2.28	0.91	2.12	1.12	1.61
11	3	2.7	1.0	1.2	0.1	0.6	95.2	1.7	0.1	2.8	0.2	81.9	82.1	81.9	84.3	82.6	3.40	1.92	2.11	1.76	2.30
12	3	3.0	3.3	1.6	0.2	0.1	95.6	0.5	0.1	2.6	1.2	82.6	82.4	79.5	81.9	81.6	2.86	1.77	2.06	1.58	2.06
0	3	2.4	1.3	1.5	2.6	3.6	96.0	0.9	0.0	2.7	0.4	83.1	82.8	80.9	82.5	82.3	3.08	1.80	2.41	1.73	2.26
1	4	2.5	1.2	2.1	0.2	0.1	96.3	0.6	0.0	2.4	0.7	81.4	83.0	80.5	81.1	81.5	3.36	2.15	2.76	2.29	2.64
2	4	2.4	0.9	1.1	0.1	0.8	96.1	0.6	0.0	3.0	0.3	81.3	83.9	81.5	84.9	82.9	3.25	1.90	2.57	2.05	2.44
3	4	1.7	0.7	0.8	0.0	0.7	96.9	0.9	0.0	2.1	0.2	81.3	79.9	76.7	75.7	78.4	3.21	2.10	2.76	2.11	2.55
4	4	2.5	0.7	0.6	0.1	0.1	96.0	0.6	0.0	2.8	0.6	85.2	82.5	81.5	84.8	83.5	4.06	3.10	3.58	2.72	3.37
5	4	3.3	1.2	0.8	0.1	0.1	94.3	1.8	0.1	3.5	0.3	83.5	84.7	80.4	85.6	83.5	3.57	2.38	3.04	2.25	2.81
6	4	2.9	0.6	1.0	0.3	0.1	94.7	1.7	0.0	3.2	0.4	81.2	80.1	77.7	77.1	79.0	3.10	2.14	2.61	1.94	2.45
7	4	3.8	0.7	0.9	0.0	0.2	93.5	1.7	0.0	4.3	0.4	84.7	83.4	82.9	84.2	83.8	2.83	1.41	2.05	1.93	2.06
8	4	2.4	2.0	4.4	5.5	12.5	96.1	0.7	0.0	3.0	0.2	85.5	82.4	78.2	83.2	82.3	2.17	0.96	1.94	1.43	1.63
9	4	3.2	1.1	2.9	10.0	12.0	95.3	0.3	0.0	3.7	0.7	88.6	88.5	84.4	84.7	86.5	1.90	0.75	1.99	1.27	1.48
10	4	1.9	1.3	3.6	13.3	15.5	97.0	0.1	0.0	2.5	0.4	82.7	82.0	79.7	84.1	82.1	2.27	1.07	2.19	1.14	1.67
11	4	3.9	1.7	0.4	0.3	1.1	93.4	1.3	0.1	4.8	0.4	83.0	80.1	79.1	82.4	81.1	3.19	1.99	2.41	1.60	2.30
12	4	4.7	2.0	1.3	0.4	0.6	92.7	1.0	0.1	5.1	1.1	83.0	80.9	80.2	82.4	81.6	2.68	1.71	2.63	1.87	2.22
0	4	2.9	1.2	1.7	2.5	3.6	95.2	0.9	0.0	3.4	0.5	83.5	82.6	80.2	82.5	82.2	2.97	1.80	2.54	1.88	2.30

TABLE 23-4D-III. Egg Quality Data

Entry No.	Cage Type	Loss % (Downgrades)	Large Bloods		Small Bloods		Large Meats		Small Meats		Candled Quality Percentages		Haugh Units		Shell Score (Specific Gravity)		
			A or Better	B	A or Better	B	A or Better	B	A or Better	B	C Quality	D	E	F	G	H	
1	O	2.3	1.3	1.2	0.1	0.1	96.4	0.6	2.5	0.6	80.9	82.0	79.9	81.1	81.0	3.35	
2	O	2.8	0.9	1.2	0.1	0.4	95.5	0.6	3.5	0.4	81.5	83.4	81.4	84.3	82.7	3.24	
3	O	1.6	0.7	0.5	0.1	0.6	97.1	0.5	0.0	2.2	80.4	79.4	76.4	78.3	78.3	3.15	
4	O	2.4	1.1	0.8	0.3	0.3	96.2	0.6	0.0	2.5	0.7	84.7	83.5	81.9	84.4	83.6	4.26
5	O	2.8	0.9	0.9	0.1	0.1	95.3	1.5	0.1	2.8	0.4	83.8	84.2	81.0	84.8	83.5	3.66
6	O	3.2	0.8	0.9	0.3	0.2	94.1	2.5	0.0	2.9	0.5	81.8	80.6	78.0	78.6	79.7	3.24
7	O	3.5	0.7	1.0	0.1	0.4	94.1	1.6	0.0	3.9	0.4	85.1	84.5	82.4	84.1	84.0	2.78
8	O	2.2	1.7	3.6	6.7	12.1	96.4	0.4	0.0	2.9	0.2	85.3	82.0	79.6	80.7	81.9	2.24
9	O	2.4	1.3	2.7	9.3	11.8	96.3	0.2	0.0	3.0	0.4	88.8	88.2	84.7	85.3	86.8	2.03
10	O	1.8	1.5	3.7	13.3	16.6	97.2	0.1	0.0	2.4	0.3	81.6	82.0	80.8	84.2	82.1	2.27
11	O	3.3	1.3	0.8	0.2	0.8	94.3	1.5	0.1	3.8	0.3	82.5	81.1	80.6	83.3	81.8	3.30
12	O	3.8	2.6	1.4	0.3	0.3	94.2	0.7	0.1	3.8	1.2	82.8	81.6	79.9	82.2	81.6	2.77
0	O	2.7	1.2	1.6	2.6	3.6	95.6	0.9	0.0	3.0	0.5	83.3	82.7	80.6	82.5	82.3	3.02
																	2.48
																	1.81
																	2.28

TWENTY-THIRD NORTH CAROLINA RANDOM SAMPLE LAYING TEST

Breeder	Stock Identification	Entry Category*	Source of Sample
Babcock Poultry Farm, Inc. Box 280 Ithaca, NY 14850	Babcock B300V WL INX	I-A YES	Babcock Poultry Farm, Inc. Box 280 Ithaca, NY 14850
Colonial Poultry Farms, Inc. P.O. Box 89 Pleasant Hill, MO 64080	True-Line #365-S WL 4W IN	II YES	Colonial Poultry Farms, Inc. Effingham, IL 62401
DeKalb AgResearch, Inc. Sycamore Road DeKalb, IL 60115	DeKalb XL-Link WL 4w INX	I-A YES	Carolina Hatcheries P.O. Box 976 Clinton, NC 28328
DeKalb AgResearch, Inc. Sycamore Road DeKalb, IL 60115	DeKalb Sex-Sal-Link "G" RIR x SYN BX	I-A	Pee Dee Hatchery Box 156 Hartsville, SC 29550
Euribrid B.U., Entry by Pilch, Inc., Box 438 Troutman, NC 28677	Hisex White WL 4w INX	I-A YES	Gulf Coast Hatchery Quincy, FL 32351
H & N, Inc. 15305 N.E. 40th St. Redmond, WA 98052	H & N p.g./two WL 4w SX	I-A YES	Gulf Coast Hatchery Quincy, FL 32351
Haley Farms, Inc. Rt. #2 Canton, GA 30114	Haley 630 WL 2w INX	II YES	Haley Farms, Inc. Rt. #2 Canton, GA 30114
Hardy & Son, Inc. John Wise Ave. Essex, MA 01929	Hardy Concord RIR x RIW BX	II YES	Hardy & Son, Inc. John Wise Ave. Essex, MA 01929
Hubbard Farms Walpole, NH 03608	Hubbard Golden Comet NH x SYN BX	I-A YES	Bowers Brothers Hatchery Albemarle, NC 28001
Hubbard Farms Walpole, NH 03608	Hubbard Leghorn WL SX	II YES	Hubbard Farms Lancaster, PA
Hy-Line International 1206 Mulberry Des Moines, IA 50309	Hy-Line W-36	I-C	Not Applicable
Shaver Poultry Breeding Farms, Ltd., Box 400 Cambridge, Ontario CANADA N1R 5V9	Starcross 288A WL SX	I-A YES	Owen Farms, Inc. Box 125 Dahlonega, GA 30533

*I-A = Extensive distribution in the southeast and entry requested.

YES = Supporting and fully cooperating with the test.

I-C = Extensive distribution in the southeast and entry neither requested or supported.

II = Less extensive distribution in the southeast and entry requested.

TABLE 23-4D-SIV & 23-4D-IV Causes of Mortality - Laying Percentages

Entry No.	Birds Per Cage	Lymphoid Leukosis	Reproductive Disorders	Other Causes	No Visible Lesions	No Necropsy Report	% Total Mortality
1	3	-	4.4	5.0	0.6	1.1	11.1
2	3	1.7	3.3	4.0	1.3	0.6	10.9
3	3	0.6	-	2.8	-	0.6	3.9
4	3	-	-	2.8	1.1	1.2	5.2
5	3	-	2.2	3.3	0.6	2.8	8.9
6	3	1.1	4.4	10.0	1.7	4.4	21.7
7	3	1.1	3.9	5.0	-	0.6	10.6
8	3	-	2.2	2.8	0.6	-	5.6
9	3	-	3.9	2.8	1.1	1.1	8.9
10	3	-	4.1	3.9	0.6	1.2	9.8
11	3	-	5.0	8.2	1.1	3.3	17.7
12	3	1.7	2.2	4.4	1.1	0.6	10.0
AV	3	0.5	3.0	4.6	0.8	1.5	10.4

1	4	1.3	5.2	5.7	1.7	2.7	16.6
2	4	1.2	4.7	5.6	0.9	2.5	14.9
3	4	0.4	0.8	4.2	0.8	2.1	8.7
4	4	1.3	3.4	3.5	0.8	1.3	10.2
5	4	0.4	4.7	6.6	0.8	1.3	13.9
6	4	1.5	5.4	11.2	1.3	1.7	21.1
7	4	0.4	7.6	7.4	0.8	2.5	18.8
8	4	1.0	3.1	3.1	2.7	1.3	11.1
9	4	-	3.3	2.2	4.2	2.6	12.3
10	4	-	7.9	1.7	0.8	3.3	13.7
11	4	0.5	7.4	4.1	2.7	2.3	17.0
12	4	0.9	6.6	4.7	0.4	1.7	14.2
AV	4	0.7	5.0	5.0	1.5	2.1	14.4

Entry Averages

1	AV	0.7	4.0	5.3	1.1	1.9	13.9
2	AV	1.5	4.0	4.8	1.1	1.5	12.9
3	AV	0.5	0.4	3.5	0.4	1.3	6.3
4	AV	0.7	1.7	3.1	1.0	1.2	7.7
5	AV	0.2	3.5	4.9	0.7	2.1	11.4
6	AV	1.3	4.9	10.6	1.5	3.1	21.4
7	AV	0.8	5.8	6.2	0.4	1.5	14.7
8	AV	0.5	2.7	3.0	1.6	0.6	8.3
9	AV	-	3.6	2.5	2.6	1.9	10.6
10	AV	-	6.0	2.8	0.7	2.3	11.8
11	AV	0.2	6.2	6.2	1.9	2.8	17.3
12	AV	1.3	4.3	4.6	0.8	1.1	12.1
AV	AV	0.6	3.9	4.8	1.2	1.8	12.4

TABLE 23-4A,B,C-IV Causes of Mortality - Laying Percentages

Entry No.	House	Lymphoid Leukosis	Reproductive Disorders	Other Causes	No Visible Lesions	No Necropsy Report	% Total Mortality
1	A	0.6	7.2	7.8	1.8	2.9	20.4
2	A	-	5.8	9.8	0.7	1.9	18.2
3	A	-	-	4.6	0.6	1.2	6.5
4	A	-	1.2	1.8	0.6	1.0	4.6
5	A	-	2.9	6.1	0.8	4.7	14.5
6	A	1.5	4.1	10.1	2.3	5.1	23.1
7	A	0.6	5.6	6.2	1.2	2.7	16.5
8	A	-	1.2	2.9	-	1.2	5.4
9	A	-	2.7	2.1	3.3	1.9	10.0
10	A	-	6.2	3.3	-	3.8	13.3
11	A	-	5.8	6.4	2.2	3.2	17.7
12	A	1.5	4.4	5.0	1.5	-	12.5
AV	A	0.3	3.9	5.5	1.2	2.5	13.5
1	B	0.7	1.4	3.8	0.7	0.7	7.3
2	B	2.3	1.9	1.6	2.0	0.6	8.4
3	B	0.8	0.6	2.9	0.6	1.4	6.4
4	B	0.7	2.6	3.8	-	0.6	7.6
5	B	-	5.4	4.8	-	0.6	10.8
6	B	1.6	2.7	9.2	0.8	4.2	18.7
7	B	0.8	8.2	6.2	-	-	15.2
8	B	-	3.6	1.5	2.7	0.6	8.4
9	B	-	7.2	1.7	4.6	2.9	16.4
10	B	-	4.7	2.2	0.6	2.2	9.6
11	B	0.7	7.3	6.6	2.0	2.2	18.8
12	B	0.8	2.8	3.6	0.8	-	8.2
AV	B	0.7	4.0	4.0	1.2	1.3	11.3
1	C	0.7	5.9	4.4	0.8	2.1	13.9
2	C	2.1	4.4	2.9	0.6	2.1	12.1
3	C	0.6	0.6	3.5	-	1.2	6.0
4	C	1.3	1.2	3.8	2.3	2.1	10.7
5	C	0.6	2.1	4.0	1.2	0.8	8.8
6	C	0.8	7.7	12.6	1.3	-	22.4
7	C	0.8	3.4	6.1	-	1.9	12.3
8	C	1.4	3.1	4.4	2.2	-	11.2
9	C	-	0.8	3.8	-	0.8	5.4
10	C	-	7.1	2.9	1.5	0.8	12.3
11	C	-	5.5	5.5	1.5	3.1	15.6
12	C	1.5	5.9	5.1	-	3.4	15.8
AV	C	0.8	4.0	4.9	1.0	1.5	12.2

TABLE 23-4D-V. Commercial Egg Gradeout

Entry No.	Treatment	Percent Grade A or Better			% Breaker		% Loss Eggs	
		Ex. Large & Jumbo	Large	Medium	Small & Pee Wee	Sound	Crax	Farm Other
<u>November - 33 Weeks</u>								
1	0	3.4	39.4	44.7	2.0	1.3	4.4	3.3 1.6
2	0	4.8	42.6	38.6	3.3	1.2	5.4	2.1 2.1
3	0	1.4	29.5	53.0	7.7	1.8	5.2	0.4 1.1
4	0	2.1	38.5	46.6	3.4	1.7	5.5	0.8 0.9
5	0	3.7	43.4	41.8	2.4	1.0	4.0	1.9 1.8
6	0	0.7	21.9	57.9	8.2	1.4	6.9	0.0 2.9
7	0	4.8	41.9	38.9	3.5	0.9	5.3	3.0 1.5
8	0	15.7	62.4	2.5	0.5	0.4	8.9	3.0 6.6
9	0	32.3	47.1	7.2	0.1	0.9	7.0	3.0 2.4
10	0	8.6	50.5	28.1	1.1	0.6	6.3	2.6 2.1
11	0	2.5	38.1	44.8	3.9	0.9	6.5	1.8 1.5
12	0	4.8	42.4	39.3	2.1	1.9	4.3	0.8 4.3
AV	0	7.1	41.5	37.0	3.2	1.2	5.8	1.9 2.4
<u>February - 47 Weeks</u>								
1	0	17.4	54.7	17.6	0.5	1.4	4.6	0.9 2.9
2	0	22.1	50.3	16.5	0.6	2.5	7.2	0.2 0.6
3	0	17.8	53.7	18.8	0.5	0.9	5.5	2.0 0.8
4	0	19.6	56.9	13.9	0.2	2.9	5.3	0.0 1.1
5	0	20.9	51.2	13.7	0.3	1.3	8.9	0.9 2.8
6	0	10.2	50.5	26.6	0.6	1.6	5.0	4.1 1.4
7	0	25.2	46.3	12.4	0.6	2.1	4.8	7.0 1.6
8	0	43.1	42.9	5.8	0.0	1.2	4.8	0.6 1.5
9	0	61.5	27.4	1.8	0.1	0.8	5.0	0.8 2.6
10	0	44.3	44.6	4.5	0.0	0.5	3.8	0.7 1.7
11	0	18.3	51.4	17.8	0.4	1.6	6.1	0.3 4.0
12	0	26.0	48.3	12.4	0.0	2.2	6.1	2.2 2.9
AV	0	27.2	48.2	13.5	0.3	1.6	5.6	1.6 2.0
<u>May - 56 Weeks</u>								
1	0	16.9	50.4	17.9	0.7	5.1	4.5	1.0 3.6
2	0	25.1	43.3	14.6	0.2	5.4	4.2	0.9 6.3
3	0	22.9	46.9	13.3	0.1	5.4	3.7	2.2 5.4
4	0	18.3	47.6	15.0	0.1	7.4	2.4	2.1 7.2
5	0	27.2	42.8	13.1	0.1	3.7	5.9	1.2 5.9
6	0	22.4	44.1	19.6	0.4	4.4	4.3	1.2 3.7
7	0	21.5	42.2	18.9	0.4	4.1	4.1	5.3 3.4
8	0	45.5	37.6	4.5	0.0	1.0	3.4	3.8 4.1
9	0	59.4	23.5	1.1	0.0	1.7	4.4	2.4 7.5
10	0	42.1	40.0	6.2	0.0	1.0	4.6	3.6 2.6
11	0	16.7	39.2	19.9	0.6	3.8	5.5	4.7 9.7
12	0	27.1	42.9	12.2	0.2	4.1	5.5	1.3 6.7
AV	0	28.8	41.7	13.0	0.2	3.9	4.4	2.5 5.5

TABLE 23-4D-V (continued) . . .

Entry No.	Treatment	Percent Grade A or Better			% Breaker		% Loss Eggs	
		Ex. Large & Jumbo	Large	Medium	Small & Pee Wee	Sound	Crax	Farm
<u>August - 69 Weeks</u>								
1	0	29.8	44.2	6.8	0.3	1.6	4.2	1.1
2	0	32.2	41.4	8.7	0.3	0.8	7.0	3.2
3	0	33.6	43.2	7.6	0.2	0.0	5.2	2.9
4	0	26.3	49.0	10.3	0.3	1.3	2.8	3.3
5	0	33.2	42.2	7.7	0.2	0.7	2.2	2.8
6	0	25.4	44.7	14.0	0.5	2.5	4.3	1.9
7	0	33.8	40.1	9.8	0.3	2.2	5.8	3.1
8	0	56.7	30.7	2.1	0.1	0.2	2.9	2.5
9	0	62.8	22.9	0.9	0.1	0.6	3.8	1.4
10	0	46.4	31.2	2.5	0.0	0.9	3.6	1.2
11	0	23.1	39.3	11.8	0.8	3.7	5.4	2.6
12	0	33.7	42.4	5.0	0.0	1.2	4.6	0.7
AV	0	36.4	39.3	7.3	0.3	1.3	4.3	2.2
								8.9

TABLE 23-F
SOME SPECIFICATIONS OF FEEDS USED

	Feed Designation								
	Start	Grow 1	Grow 2	Lay-TR	Lay-TS	Lay-TT	Lay-TU	Lay-TW	Lay-TX
Met. Energy, Kcal.1b.	1307	1328	1329	1270	1270	1270	1280	1285	1285
Protein, %	20.7	17.4	14.8	20.5	19.0	18.0	16.0	15.5	14.9
Lysine, %	1.10	0.84	0.64	1.05	0.94	0.88	0.75	0.71	0.67
Methionine, %	0.38	0.39	0.40	0.54	0.45	0.37	0.37	0.35	0.34
TSAA, %	0.70	0.66	0.55	0.84	0.73	0.64	0.61	0.58	0.56
Avail. Phos., %	0.38	0.37	0.37	0.55	0.50	0.44	0.40	0.38	0.35
Calcium, %	0.62	0.60	0.59	3.50	3.55	3.55	3.60	3.60	3.60
Fat, %	3.13	3.34	3.52	3.44	3.65	3.61	3.58	3.67	3.68
Sodium, %				0.22	0.19	0.17	0.17	0.16	0.15
Relative Cost, 7/31				1.13	1.07	1.03	1.00	0.98	0.97

TABLE 23-4D-VI. Duncan Range Test and Range Groups

Range	Entry	Eggs Per Pullet Housed	Duncan Test	% Production After 50% Entry			Duncan Test	Range	Entry	Feed Per Lb. of Eggs	Duncan Test	Range	Entry	Days Lost to Mortality	Duncan Test
				Range	Entry	% Production After 50%									
1	5	253.6		1	11	78.9		1	3	2.27		1	3	12.6	
1	4	250.2		1	5	78.8		1	2	2.28		1	4	12.9	
1	3	249.5		1	1	78.5		1	11	2.31		1	8	13.3	
1	12	248.6		1	2	78.4		1	5	2.32		1	12	17.9	
2	2	246.0		2	3	77.2		1	1	2.32		1	9	18.1	
2	11	246.0		2	12	77.1		2	6	2.36		2	5	21.2	
2	10	241.6		2	9	76.5		2	4	2.37		2	10	21.8	
2	1	241.6		2	4	76.4		Mean	2.40			Mean	23.5		
Mean		239.1		Mean		75.8		3	10	2.41		3	2	26.3	
3	7	235.4		3	10	75.7		3	12	2.41		3	7	27.8	
3	9	232.8		3	7	74.3		3	7	2.45		4	1	33.9	
4	8	215.2		4	6	69.4		3	9	2.49		4	11	35.5	
4	6	208.7		4	8	68.6		4	8	2.76		4	6	40.6	