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I am enclosing the final summary of the Twenty-Second North Carolina Random Sample Laying Test which you have requested. We believe that the information contained herein is a useful guide for evaluating egg production stocks and management systems. Additional useful data on most of these stocks are published in the reports of other laying tests in New Hampshire and 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 indicates voluntarily entered stocks with full cooperation by the breeder or distributor. Category II designates stocks lacking major distribution in North Carolina but enjoying commercial volume elsewhere and tested at the request of the breeder.

This is the first flock grown in curtain-side, fully insulated, flat-deck brood-grow house in combination with the closed growing facility added three years earlier. The pullets that were grown in the flat-deck house were divided between a fully insulated, high rise, curtain-side laying house and a fully insulated, flush waste, curtain-side laying house. The pullets that were grown in the closed house were placed in a closed laying house. At 21 weeks of age the pullets were randomly assigned to our phased feeding program vs. a feeding program conforming to the instructions of the breeder, to deep vs. shallow cages, and to 3 vs. 4 birds per cage in each of the laying houses. Feed consumption and production data are calculated every 14 days and appropriate selection among the six layer rations shown in the tables is made for feeding during the next two weeks. This is the final flock for this type of feeding program comparison.

All space not required for the laying test was utilized for layer feeding program research, vent vs. feather sexing trials, and physiological stress research. We express our appreciation to DeKalb AgResearch, Inc., Shaver Poultry Breeding Farms, Ltd., and their distributors, and other helpful individuals for providing extra hatching eggs to make this research possible and to Dr. Bill Emory, NCDA, Monroe, N. C. and Dr. Lyman Crittenden, USDA, East Lansing, Michigan for conducting laboratory tests which contributed to the research.

We have discovered that an undetermined amount of upward bias has been included in specific gravity scores published for this project in some past reports. The bias has been removed in this report. We regret the unavoidable, unreasonably late appearance of this report.

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

Very truly yours,
Grady A. Martin
GRADY A. MARTIN
Extension Poultry Specialist

FINAL SUMMARY REPORT
TWENTY-SECOND NORTH CAROLINA RANDOM SAMPLE LAYING TEST
April 2, 1980 through August 11, 1981

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, North Carolina 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, North Carolina 27650, is Project Leader. Mr. Clyde Z. McSwain is Superintendent of the Piedmont Research Station near Salisbury, North Carolina 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 interest in the state advises the Steering Committee in establishing policies and practices which best serve this purpose.

Performance data are presented in the tables which have a 3-part designation system. The first part (22) is the test number. The second part indicates the quarter of the laying year through which data is accumulated and housing type of birds reported--A = closed house, B = high rise laying house, C = flush waste laying house, D = average of all 3 laying houses, and F = feed specification. The third part has Roman numerals to indicate data items included (e.g. III is egg quality data) and letters to designate type of comparison in the table; F = feeding program, C = cage type, D = entries only, and G = growing data. These data are for one year at one location. Comparison of some of the stocks may be available from tests at Durham, New Hampshire and Ottawa, Canada.

INFORMATION CONCERNING DATA REPORTED

Replacement of obsolete housing at this station was begun with construction of tight-and-air controlled (LAC) brood-grow and laying houses in 1977 and was completed in 1980 by addition of a curtain-side, flat-deck brood-grow (CS-Gro) house, a high rise, curtain side (Hi-R) laying house, and a flush waste, curtain side (FW) laying house. The CS-Gro house has 240 cages in flat-deck arrangement with one tube feeder and 3 Swish brand water cups in each cage. Each 40 in. X 48 in. (101.6 cm X 121.9 cm) cage contains one replicate. Each of the laying houses has both shallow (18 in. X 12 in. or 45.7 cm X 30.5 cm) and deep (12 in. X 18 in. or 30.5 cm X 45.7 cm) cages and enough insulation to utilize bird heat in maintaining minimum temperature at the levels designed into modern commercial laying houses. This report summarizes data from a 21-week growing period and a 50-week laying period.

Samples of 2,520 hatching eggs from selected supply flocks of cooperating breeders or distributors were shipped to the test site where all eggs were incubated and 924 sexed pullet chicks (when available) were placed for each of the twelve entries. Six hundred sixteen chicks were assigned to 14 reps @ about 44 sq. in. per bird (35.5 birds/m²) in the CS-Gro house and 308 pullets were assigned to two reps at the same density in the LAC-Gro house. All birds were vaccinated at day-old for Marek's with cell associated live turkey herpes virus vaccine. We express our appreciation to Keenum, Inc., P.O. Box 1706, Anniston, Alabama for providing the vaccine for the flock and to Mr. Larry Rose in the School of Veterinary Science and Mr. Mike Williams in the Department of Poultry Science at North Carolina State University for supervising the administration of the vaccine. No mortality was attributed to Marek's during the growing period of this flock.

All pullets had their beaks precision trimmed between 6 and 10 days of age with touch-up at 12 weeks of age, if needed. All pullets were vaccinated for Newcastle at 7 days (B1), 4 weeks (LaSota) and 16 weeks (LaSota) and for bronchitis at 7 days and

16 weeks via water, vaccinated for pox via wing web at 12 weeks, and vaccinated for Avian Encephalomyelitis at 16 weeks of age. Mycoplasma gallisepticum status of the flock was monitored and remained negative throughout.

All mash rations described by sample specifications in Table 22-F were purchased on contract from a commercial feed manufacturer and fed ad lib. Approximately 2.5 lbs. of the starting ration per chick was fed, followed by bi-weekly sample weighing and assignment to Grower 1 or Grower 2, depending upon adherence to breeder's pullet growth charts. Light in the CS-Gro house was held constant at the length of the longest day and light in the LAC-Gro house was held at a constant 9½ hours during the growing period.

At 147 days of age, four reps of 30 birds and 4 reps of 40 birds for each entry (when available) were placed in each of the three laying houses with reps equally divided between deep and shallow cages, between 3 and 4 birds per cage, and between our phased feeding program and a feeding program conforming to pre-housing instructions of the breeder. For the breeder-specified feeding programs, the four reps of one entry in one house constituted a feeding unit and for our phased feeding program the six feeding units were white-egg birds in each house and brown-egg birds in each house. Feed consumption and production rate during each 14-day period (plus infrequent sample body weights) were used to guide selection among the layer rations in Table 22-F for each feeding unit during the next 14 days. Feeds were purchased on contract from a commercial feed manufacturer and delivered in bulk to the station bins.

Variability between reps of this flock has been increased above normal expectation due to temporary housing and feeding arrangements imposed by delayed completion of house construction and equipment installation.

We express our gratitude 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 Dr. Bill Emory at 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.

RESULTS Part I of Tables

Entry No. is assigned at random to the particular entry.

Treatment: 1 = phased feed, LAC house; 2 = breeder program feed, LAC house; 3 = phased feed, Hi-R house; 4 = breeder program feed, Hi-R house; 5 = phased feed, FW house; 6 = breeder program feed, FW house; and 0 = average of treatments for the entry; or
Cage Type: S = shallow and D = deep cage; or Birds Per Cage: 3 = 72 sq. in. per bird and 4 = 54 sq. in. per bird.

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 recorded in pounds at housing and at end of test.

Egg Size, Distribution (%) was obtained by crediting each week's production to size classes in proportion to those observed in the total production of one day. Individual eggs weighing 24 but less than 27 oz./doz. are classified as large. Other size classes are scaled up or down from large in blocks of 3 oz./doz.

Average Egg Weight was obtained by crediting all eggs for each week 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 Treatment, Cage Type, or Birds Per Cage 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 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 Price charges the average of prices quoted for all stocks in the test in April 1980 for each net pullet at 1 week and divides 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 Treatment, Cage Type, or Birds Per Cage 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 one day's production from each lot at about 30-day intervals throughout 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 one day's production 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 Treatment, Cage Type, or Birds Per Cage 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 Dr. W. H. Emory for providing this service to the test. The 12-point classification system recommended by the Council of American Official Poultry Tests was used on autopsy reports. Some categories which accounted for little mortality were combined under "Other" in the interest of saving space.

Part V of Tables

Entry No. and Treatment 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 feed 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 22-4A-FI. Body Weight, Egg Size, Maturity and Egg Production

Entry No.	Treatment	Breeder	497 Days	147 Days	Average Body Weight			% Egg Size Distribution			Average Egg Wt. oz./doz.	Age at 50% Production Days	400-497 Days	456-497 Days	Eggs Per Housed Unit
					Small	Mediu	Large	Extra Large and Over	Large	Mediu					
Phased Feed															
1	1	Hy-Line (W-36)	2.92	3.79	0.3	8.9	18.4	39.1	33.3	24.4	161.0	72.0	81.1	72.4	62.8
2	1	DeKalb (XL Link)	2.79	3.78	0.1	6.6	17.3	48.4	27.6	24.6	162.2	71.2	86.2	75.4	63.5
3	1	Shaver (S-288)	3.10	3.99	0.2	2.9	11.0	40.8	45.1	25.4	161.8	77.6	85.6	74.2	61.7
4	1	DeKalb (Sex-Sal-Link G)	3.46	5.09	0.0	0.9	4.6	24.8	69.7	27.2	175.8	58.5	79.8	75.1	63.8
5	1	Babcock (B-300V)	2.88	3.76	0.1	6.6	17.7	47.7	27.9	24.2	162.2	77.3	80.3	71.8	63.5
6	1	Hubbard (Gld. Comet)	3.58	4.56	0.0	3.8	11.2	37.2	47.7	25.6	161.8	73.7	80.8	74.4	64.0
7	1	H & N (p.g./Two)	2.73	3.70	0.1	6.9	17.4	49.3	26.3	24.3	163.5	72.6	83.1	77.0	70.6
8	1	Euribrid (Hisex Wh.)	2.80	3.70	0.8	8.1	18.4	46.6	26.0	24.1	161.2	81.3	80.9	72.9	64.7
9	1	Euribrid (Hisex Br.)	3.43	5.18	0.1	2.5	8.1	34.8	54.5	26.0	164.8	73.1	81.1	75.8	66.1
10	1	Babcock (B-380)	3.63	5.04	0.1	1.6	6.2	33.3	58.8	26.5	164.0	71.2	83.5	76.2	64.8
11	1	Tatum (T-173)	3.44	4.46	0.0	3.8	10.9	36.5	48.8	25.7	161.2	70.8	76.9	71.7	61.5
12	1	Tatum (T-100)	2.98	3.99	0.1	3.6	11.4	41.6	43.4	25.3	160.8	77.5	82.8	75.3	68.6
0	1	Average	3.15	4.25	0.2	4.7	12.7	40.0	42.4	25.3	163.4	73.1	81.8	74.4	64.7
Breeder Program Feed															
1	2	Hy-Line (W-36)	2.92	4.07	0.1	6.8	18.1	41.3	33.7	24.6	162.8	67.1	80.6	71.6	64.0
2	2	DeKalb (XL Link)	2.84	3.77	0.1	5.9	15.7	45.1	33.3	24.7	162.0	75.6	86.3	77.5	66.1
3	2	Shaver (S-288)	3.14	3.99	0.2	3.3	10.1	40.4	46.0	25.6	161.0	79.2	84.1	78.4	64.3
4	2	DeKalb (Sex-Sal-Link G)	3.47	5.15	0.0	0.5	3.8	24.7	71.0	27.5	177.5	56.5	80.2	74.7	66.4
5	2	Babcock (B-300V)	2.81	3.82	0.1	6.4	17.1	46.5	29.8	24.3	163.0	78.4	75.8	73.7	63.2
6	2	Hubbard (Gld. Comet)	3.54	4.74	0.0	4.1	11.6	36.8	47.4	25.5	160.5	71.9	81.7	74.1	65.5
7	2	H & N (p.g./Two)	2.82	3.75	0.2	5.9	16.1	46.8	31.0	24.5	164.2	76.1	79.6	71.2	60.6
8	2	Euribrid (Hisex Wh.)	2.72	3.70	1.1	9.0	18.8	43.5	27.6	24.0	161.8	82.8	83.6	79.6	68.6
9	2	Euribrid (Hisex Br.)	3.54	5.11	0.0	1.8	9.5	32.1	56.5	26.3	165.2	68.2	82.6	73.1	64.9
10	2	Babcock (B-380)	3.65	4.99	0.0	2.0	7.4	31.6	59.0	26.4	163.0	71.5	83.2	76.2	64.1
11	2	Tatum (T-173)	3.52	4.63	0.1	3.0	9.5	33.3	54.1	26.1	162.0	71.3	80.3	73.2	63.2
12	2	Tatum (T-100)	2.80	3.90	0.1	3.4	11.1	42.1	43.3	25.3	162.0	72.7	81.1	73.7	62.2
0	2	Average	3.15	4.30	0.2	4.3	12.4	38.7	44.4	25.4	163.8	72.6	81.6	74.6	64.4

TABLE 22-4B-F1. Body Weight, Egg Size, Maturity and Production Rate

Entry No.	Treatment	Breeder	% Egg Size Distribution						Egg Production Rate - %									
			Average Body Weight	Pee Wee	Small	Medium	Large	Extra Large and Over										
1	3	Hy-Line (W-36)	2.76	3.81	0.1	3.6	9.9	41.2	45.3	25.4	180.0	56.0	79.8	72.5	67.8	68.6	74.6	231.5
2	3	Dekalb (XL Link)	2.88	3.90	0.1	2.1	7.1	45.1	45.6	25.3	174.2	61.3	85.7	76.8	71.0	66.8	78.4	249.2
3	3	Shaver (S-288)	2.98	4.29	0.0	1.5	4.5	32.7	61.3	26.5	177.0	66.0	86.4	85.4	71.6	70.4	82.0	259.3
4	3	Deka1b (Sex-Sal-Link G)	3.39	4.93	0.0	0.3	1.9	16.6	81.2	28.1	195.5	39.2	78.0	76.2	66.7	67.2	73.3	219.9
5	3	Babcock (B-300 V)	2.78	3.88	0.1	3.3	10.2	41.5	44.9	25.1	171.8	63.6	81.8	77.2	67.2	64.3	76.0	245.5
6	3	Hubbard (Gld. Comet)	3.58	4.77	0.0	1.3	4.8	27.3	66.6	26.6	168.8	65.0	82.8	76.2	66.8	65.0	76.2	234.9
7	3	H & N (p.g./Two)	2.86	3.98	0.0	2.2	8.9	44.5	44.3	25.2	172.2	64.2	82.8	71.6	65.7	70.1	75.0	230.3
8	3	Euribrid (Hisex Wh)	2.80	3.65	0.1	3.9	10.4	47.4	38.1	24.7	161.5	73.3	83.0	71.4	67.1	69.0	75.1	251.2
9	3	Euribrid (Hisex Br)	3.51	4.96	0.0	0.9	3.9	28.4	66.8	26.7	180.2	52.6	82.9	77.4	67.6	59.0	75.7	230.2
10	3	Babcock (B-380)	3.81	4.71	0.1	0.6	3.4	26.4	69.6	26.9	169.8	63.5	82.9	76.5	64.1	61.8	75.4	237.2
11	3	Tatum (T-173)	3.51	4.63	0.0	0.8	4.5	23.5	71.2	27.0	173.5	60.4	77.4	73.9	64.3	63.8	72.6	221.1
12	3	Tatum (T-100)	3.01	4.14	0.0	0.9	4.5	27.8	66.7	26.6	176.2	60.2	87.0	80.2	71.3	68.7	79.7	241.5
0	3	Average	3.15	4.30	0.0	1.8	6.2	33.5	58.5	26.2	175.1	60.4	82.6	76.3	67.6	66.2	76.2	237.6
<u>Breeder Program Feed</u>																		
1	4	Hy-Line (W-36)	2.78	3.77	0.1	4.6	9.9	43.7	41.7	25.2	183.5	54.2	80.1	73.8	66.5	65.5	74.6	231.8
2	4	DeKalb (XL Link)	2.89	3.82	0.1	2.4	8.7	43.7	45.1	25.4	175.5	60.2	83.7	83.3	70.9	69.7	79.4	249.1
3	4	Shaver (S-288)	2.97	4.11	0.0	1.8	5.5	36.4	56.3	26.0	171.5	63.6	89.1	80.0	67.6	65.4	79.1	239.2
4	4	Deka1b (Sex-Sal-Link G)	3.42	4.97	0.0	0.4	1.9	19.0	78.7	27.8	189.8	44.1	75.0	72.8	66.7	66.6	71.5	214.7
5	4	Babcock (B-300 V)	2.78	4.00	0.0	3.1	9.7	41.6	45.5	25.2	167.5	63.9	83.1	75.1	68.4	68.1	75.4	248.5
6	4	Hubbard (Gld. Comet)	3.60	4.59	0.0	1.0	5.1	29.1	64.8	26.6	169.5	63.5	85.6	77.4	69.4	67.4	77.3	244.9
7	4	H & N (p.g./Two)	2.87	3.80	0.0	2.2	8.1	45.0	44.7	25.3	170.8	62.5	82.1	76.4	68.8	67.4	76.3	231.6
8	4	Euribrid (Hisex Wh)	2.86	3.63	0.1	4.4	11.0	46.5	38.0	24.8	164.5	75.0	84.0	82.6	72.2	70.2	80.3	263.8
9	4	Euribrid (Hisex Br)	3.74	5.06	0.0	1.0	4.3	24.4	70.3	27.1	176.0	58.0	78.6	74.7	64.7	63.1	73.3	224.3
10	4	Babcock (B-380)	3.80	4.84	0.0	0.6	4.1	24.8	70.5	26.9	172.5	62.8	83.2	74.8	65.6	65.2	75.4	244.6
11	4	Tatum (T-173)	3.57	4.70	0.0	0.9	4.6	25.1	69.4	27.0	172.0	61.2	79.6	74.7	64.7	63.8	73.5	221.5
12	4	Tatum (T-100)	2.91	4.19	0.0	1.5	5.1	33.2	60.1	26.4	173.2	62.7	80.6	80.6	67.1	66.2	76.6	239.7
0	4	Average	3.18	4.29	0.0	2.0	6.5	34.4	57.1	26.1	173.9	61.0	82.0	77.2	67.7	66.6	76.1	237.8

TABLE 22-4C-FI. Body Weight, Egg Size, Maturity and Egg Production

Entry No.	Treatment	Breeder	Average Body Weight	% Egg Size Distribution			Egg Production Rate - %			Eggs Per Housed	
				497 Days	147 Days	497 Days	148-231 Days	316-399 Days	400-497 Days		
1	Phased Feed	Hy-Line (W-36)	2.73	3.79	0.0	3.8	11.8	45.1	25.2	179.8	56.6
2	DeKalb (XL Link)	2.91	3.92	0.0	1.9	8.0	42.5	47.6	25.7	173.0	63.2
3	Shaver (S-288)	2.96	4.26	0.0	1.5	6.2	30.6	61.7	26.8	166.8	68.6
4	DeKalb (Sex-Sal-Link G)	3.38	4.96	0.0	0.5	1.7	16.6	81.2	28.3	199.8	80.3
5	Babcock (B-300V)	2.78	3.93	0.1	2.4	10.5	42.9	44.1	25.3	165.5	74.5
6	Hubbard (Gld. Comet)	3.54	4.79	0.0	0.7	5.0	29.9	64.4	26.7	168.8	65.3
7	H & N (p.g./Two)	2.87	3.99	0.1	1.5	8.5	42.7	47.3	25.7	168.2	66.6
8	Euribrid (Hisex Wh.)	2.74	3.71	0.1	3.3	12.0	42.7	42.0	25.1	166.2	70.6
9	Euribrid (Hisex Br.)	3.61	4.90	0.0	0.7	3.4	25.2	70.6	27.3	178.8	56.2
10	Babcock (B-380)	3.92	4.99	0.0	0.7	4.3	27.5	67.4	27.1	166.0	69.5
11	Tatum (T-173)	3.52	4.63	0.0	0.9	4.8	27.1	67.2	27.0	169.0	63.7
12	Tatum (T-100)	2.86	4.11	0.0	1.2	5.7	32.9	60.1	26.5	173.5	61.8
0	Average		3.15	4.33	0.0	1.6	6.8	33.8	57.8	26.4	172.9
										62.3	74.9
										77.2	66.5
										77.2	74.0
										233.1	233.3
1	Breeder Program Feed	Hy-Line (W-36)	2.66	3.88	0.0	3.3	11.3	41.9	43.4	25.4	179.2
2	DeKalb (XL Link)	2.92	3.96	0.1	1.8	8.1	40.2	49.8	25.9	172.0	63.8
3	Shaver (S-288)	2.87	4.14	0.0	1.5	6.6	35.2	56.8	26.1	171.0	61.9
4	DeKalb (Sex-Sal-Link G)	3.18	4.95	0.0	0.2	1.4	15.0	83.3	28.7	201.2	33.3
5	Babcock (B-300V)	2.80	3.85	0.1	3.3	12.7	44.8	39.1	25.0	166.0	68.7
6	Hubbard (Gld. Comet)	3.54	4.66	0.0	1.0	5.2	29.3	64.5	26.7	168.2	66.9
7	H & N (p.g./Two)	2.89	3.74	0.0	3.1	9.9	43.4	43.5	25.4	170.0	65.4
8	Euribrid (Hisex Wh.)	2.78	3.83	0.0	2.6	11.4	42.3	43.6	25.3	166.8	73.0
9	Euribrid (Hisex Br.)	3.66	5.05	0.0	0.9	5.2	25.4	68.5	27.2	171.8	62.3
10	Babcock (B-380)	3.80	4.87	0.0	0.6	4.6	27.0	67.7	27.2	171.2	64.8
11	Tatum (T-173)	3.60	4.74	0.0	1.0	4.9	26.9	67.1	27.1	168.5	63.7
12	Tatum (T-100)	2.92	4.21	0.0	0.9	5.2	31.2	62.7	26.7	170.5	65.5
0	Average		3.14	4.32	0.0	1.7	7.2	33.6	57.5	26.4	173.0
										62.0	74.9
										77.0	67.4
										233.1	233.3

TABLE 22-4D-FI. Body Weight, Egg Size, Maturity, and Egg Production

Entry No.	Treatments	Breeder	Phased Feed		% Egg Size, Distribution				Average 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	1,3,5	Hy-Line (W-36)	2.80	3.80	0.1	5.4	13.3	41.8	39.3	25.0	173.6	61.5	76.6	73.2	65.9	73.5	229.6	
2	1,3,5	Dekalb (XL Link)	2.86	3.86	0.0	3.5	10.8	45.3	40.3	25.2	169.8	65.3	84.4	78.0	66.8	64.3	77.3	244.7
3	1,3,5	Shaver (S-288)	3.01	4.18	0.1	2.0	7.2	34.7	56.0	26.2	168.5	70.7	84.1	79.8	66.1	64.4	78.2	245.7
4	1,3,5	Dekalb (Sex-Sal-Link G)	3.41	4.99	0.0	0.6	2.7	19.3	77.4	27.9	190.3	45.1	74.4	75.4	64.4	63.9	71.6	218.0
5	1,3,5	Babcock (B-300V)	2.81	3.86	0.1	4.1	12.8	44.0	39.0	24.8	166.5	69.6	79.2	74.0	65.4	63.6	74.3	245.3
6	1,3,5	Hubbard (Gld. Comet)	3.56	4.71	0.0	1.9	7.0	31.5	59.6	26.3	166.4	68.0	79.1	75.9	65.9	64.2	74.9	236.9
7	1,3,5	H & N (p.g./Two)	2.82	3.89	0.1	3.6	11.6	45.5	39.3	25.1	168.0	67.8	81.4	76.8	70.7	71.5	77.4	241.2
8	1,3,5	Euribrid (Hisex Wh.)	2.78	3.69	0.3	5.1	13.6	45.6	35.4	24.7	163.0	75.1	81.2	74.4	67.1	68.1	75.8	249.4
9	1,3,5	Euribrid (Hisex Br.)	3.52	5.01	0.0	1.4	5.1	29.5	64.0	26.7	174.6	60.6	78.1	76.4	66.6	62.6	74.4	235.7
10	1,3,5	Babcock (B-380)	3.78	4.92	0.0	1.0	4.6	29.1	65.3	26.8	166.6	68.0	80.9	76.7	65.6	63.7	75.8	245.7
11	1,3,5	Tatum (T-173)	3.49	4.57	0.0	1.8	6.7	29.0	62.4	26.6	167.9	65.0	75.3	72.2	62.2	61.5	71.4	223.3
12	1,3,5	Tatum (T-100)	2.95	4.08	0.0	1.9	7.2	34.1	56.7	26.1	170.2	66.5	82.6	78.3	68.4	66.9	77.5	239.5
0	1,3,5	Average	3.15	4.30	0.1	2.7	8.6	35.8	52.9	25.9	170.5	65.3	79.8	75.9	66.3	65.0	75.2	237.9
Breeder Program Feed																		
1	2,4,6	Hy-Line (W-36)	2.79	3.91	0.1	4.9	13.1	42.3	39.6	25.1	175.2	58.8	76.9	74.4	66.2	66.2	73.8	230.2
2	2,4,6	Dekalb (XL Link)	2.89	3.85	0.1	3.3	10.8	43.0	42.7	25.3	169.8	66.5	82.3	80.4	69.5	69.4	78.3	247.7
3	2,4,6	Shaver (S-288)	2.99	4.08	0.1	2.2	7.4	37.3	53.0	25.9	167.8	68.3	83.0	79.1	67.0	66.4	77.3	237.3
4	2,4,6	Dekalb (Sex-Sal-Link G)	3.36	5.02	0.0	0.4	2.4	19.6	77.7	28.0	189.5	44.6	75.5	74.7	65.7	66.0	71.9	217.6
5	2,4,6	Babcock (B-300V)	2.80	3.89	0.1	4.3	13.2	44.3	38.1	24.8	165.5	70.3	77.4	74.8	66.6	66.3	74.2	248.1
6	2,4,6	Hubbard (Gld. Comet)	3.56	4.66	0.0	2.0	7.3	31.8	58.9	26.2	166.1	67.5	81.5	75.5	67.3	66.2	75.5	240.0
7	2,4,6	H & N (p.g./Two)	2.86	3.76	0.1	3.7	11.3	45.1	39.8	25.1	168.3	68.0	79.1	74.7	66.7	66.2	75.2	233.0
8	2,4,6	Euribrid (Hisex Wh.)	2.78	3.72	0.4	5.3	13.7	44.1	36.4	24.7	164.3	76.9	83.2	80.1	69.9	68.8	79.2	261.1
9	2,4,6	Euribrid (Hixex Br.)	3.65	5.07	0.0	1.3	6.3	27.3	65.1	26.9	171.0	62.8	78.0	74.5	64.5	62.8	73.4	232.2
10	2,4,6	Babcock (B-380)	3.75	4.90	0.0	1.1	5.4	27.8	65.7	26.9	168.9	66.4	79.7	74.9	65.1	63.9	74.8	241.3
11	2,4,6	Tatum (T-173)	3.56	4.69	0.0	1.6	6.3	28.4	63.6	26.7	167.5	65.4	77.5	74.4	64.3	63.8	73.1	229.3
12	2,4,6	Tatum (T-100)	2.88	4.10	0.0	1.9	7.1	35.5	55.4	26.1	168.6	67.0	80.1	77.8	65.3	62.5	75.6	234.7
0	2,4,6	Average	3.15	4.29	0.1	2.7	8.7	35.5	53.0	26.0	170.2	65.2	79.5	76.3	66.5	65.7	75.2	237.7

TABLE 22-4D-CI. Body Weight, Egg Size, Maturity, and Egg Production

Entry No.	Cage Type	Breeder	Average Body Weight	% Egg Size, Distribution	Egg Production Rate - %			Eggs Per Unit Housed									
			497 Days	Small Pee Wee	Medium SmaLl	Large Extra Large and Over Size	456-497 Days	400-497 Days	316-399 Days	232-315 Days	148-231 Days						
<u>Shallow Cages</u>																	
1	S	Hy-Line (W-36)	2.77	3.91	0.1	4.9	13.0	42.5	39.6	24.9	173.4	61.2	79.4	74.7	66.1	75.0	235.2
2	S	DeKalb (XL Link)	2.88	3.88	0.1	3.5	10.8	45.1	40.5	25.1	169.0	67.2	88.2	80.4	68.8	80.4	251.5
3	S	Shaver (S-288)	3.03	4.17	0.1	1.9	7.1	36.8	54.2	26.0	167.1	71.7	85.3	80.3	67.5	66.0	249.7
4	S	DeKalb (Sex-Sal-Link G)	3.39	5.11	0.0	0.5	3.0	19.8	76.7	27.8	186.7	47.8	77.6	76.6	66.4	66.5	224.0
5	S	Babcock (B-300V)	2.81	3.94	0.1	3.6	12.0	42.3	42.0	24.9	165.0	70.4	80.5	74.3	67.0	66.1	247.9
6	S	Hubbard (Gld. Comet)	3.58	4.67	0.0	1.8	7.2	31.8	59.2	26.2	166.1	69.0	81.5	75.7	66.9	65.4	243.7
7	S	H & N (p.g./Two)	2.83	3.83	0.1	3.5	10.7	45.0	40.8	25.1	167.4	69.4	83.3	76.9	70.2	69.8	242.4
8	S	Euribrid (Hisex Wh.)	2.78	3.71	0.4	5.2	13.6	44.5	36.2	24.6	164.2	76.3	84.1	78.3	69.6	69.2	257.2
9	S	Euribrid (Hisex Br.)	3.59	5.12	0.0	1.4	5.7	27.7	65.2	26.7	172.3	62.4	79.9	76.0	66.7	62.9	235.0
10	S	Babcock (B-380)	3.78	5.00	0.0	1.3	4.7	28.6	65.3	26.8	168.4	67.1	81.6	76.1	66.9	65.0	244.0
11	S	Tatum (T-173)	3.58	4.67	0.0	1.6	6.9	30.0	61.4	26.5	165.9	66.6	78.3	74.4	64.6	63.9	227.9
12	S	Tatum (T-100)	2.89	4.08	0.0	1.9	7.1	34.9	56.1	26.1	168.7	67.2	82.8	79.3	66.9	64.6	243.6
0	S	Average	3.16	4.34	0.1	2.6	8.5	35.8	53.1	25.9	169.5	66.4	81.9	76.9	67.5	66.2	241.8
<u>Deep Cages</u>																	
1	D	Hy-Line (W-36)	2.82	3.80	0.2	5.5	13.4	41.6	39.4	25.1	175.3	59.1	74.1	72.9	65.3	65.9	224.7
2	D	DeKalb (XL Link)	2.86	3.84	0.0	3.4	10.8	43.2	42.5	25.5	170.7	64.6	78.5	77.9	65.4	65.0	240.9
3	D	Shaver (S-288)	2.98	4.08	0.1	2.2	7.5	35.2	54.9	26.2	169.2	67.3	81.7	78.6	65.6	64.8	233.4
4	D	DeKalb (Sex-Sal-Link G)	3.38	4.90	0.0	0.4	2.1	19.1	78.3	28.1	193.2	42.0	72.4	73.6	63.7	63.4	211.6
5	D	Babcock (B-300V)	2.80	3.81	0.1	4.8	14.0	46.0	35.1	24.7	167.0	69.5	76.1	74.5	65.0	63.8	245.4
6	D	Hubbard (Gld. Comet)	3.54	4.71	0.0	2.2	7.1	31.4	59.3	26.3	166.4	66.4	79.0	75.7	66.3	65.0	233.2
7	D	H & N (p.g./Two)	2.86	3.82	0.1	3.8	12.3	45.6	38.3	25.1	168.9	66.4	77.2	74.6	67.2	67.9	231.8
8	D	Euribrid (Hisex Wh.)	2.79	3.70	0.4	5.2	13.7	45.1	35.6	24.7	163.1	66.1	75.7	80.3	67.3	67.8	253.3
9	D	Euribrid (Hisex Br.)	3.58	4.97	0.0	1.3	5.8	29.1	63.8	26.8	173.2	61.1	76.3	74.9	64.4	62.6	233.0
10	D	Babcock (B-380)	3.75	4.81	0.0	0.7	5.3	28.2	65.7	26.9	167.1	67.3	79.0	75.5	63.8	62.6	243.0
11	D	Tatum (T-173)	3.48	4.59	0.0	1.9	6.1	27.4	64.6	26.8	169.5	63.9	74.5	72.1	61.9	61.4	224.8
12	D	Tatum (T-100)	2.94	4.10	0.0	2.0	7.3	34.7	56.0	26.1	170.1	66.2	79.9	76.9	66.8	64.8	230.7
0	D	Average	3.15	4.26	0.1	2.8	8.8	35.6	52.8	26.0	171.1	64.1	77.4	75.3	65.2	64.6	233.8

TABLE 22-4D-SI. Body Weight, Egg Size, Maturity, and Egg Production

Entry No. Birds/Cage	Breeder	72 Sq. In./Bird	Average Body Weight	% Egg Size, Distribution				Average Egg Wt. Oz./Doz.	Egg Production Rate - %		Eggs Per Pullet Housed							
				147 Days	497 Days	Pee Wee	Small	Medium	Large	Extra Large and Over								
1	3	Hy-Line (W-36)	2.83	3.97	0.1	4.9	12.5	42.7	39.8	25.1	173.0	61.4	80.4	75.3	67.4	67.5	75.7	237.7
2	3	Dekalb (XL Link)	2.88	3.92	0.1	3.8	11.4	44.3	40.5	25.2	169.0	69.1	86.0	81.5	71.3	68.9	80.5	257.5
3	3	Shaver (S-288)	2.99	4.17	0.0	2.1	7.2	35.8	54.8	26.1	167.1	71.5	85.0	80.2	66.8	65.6	78.8	251.8
4	3	Dekalb (Sex-Sal-Link G)	3.39	5.18	0.0	0.4	2.3	18.7	78.6	28.0	186.0	48.8	79.9	76.8	67.1	66.9	74.6	230.5
5	3	Babcock (B-3000V)	2.78	3.95	0.1	3.8	12.2	43.5	40.4	25.0	167.0	69.5	79.9	75.4	68.0	66.7	75.5	250.5
6	3	Hubbard (Gld. Comet)	3.59	4.82	0.0	1.5	6.2	31.2	61.1	26.4	165.9	69.5	83.5	76.7	67.6	66.0	77.0	251.6
7	3	H & N (p.g./Two)	2.86	3.87	0.1	3.4	11.2	44.9	40.4	25.1	167.8	69.4	81.3	77.2	70.6	68.9	77.8	242.2
8	3	Euribrid (Hisex Wh.)	2.76	3.75	0.4	5.6	13.4	44.3	36.4	24.7	162.5	78.1	84.7	77.8	70.4	69.4	79.1	265.2
9	3	Euribrid (Hisex Br.)	3.59	5.24	0.0	1.1	5.4	27.5	66.0	26.9	171.1	65.7	82.6	78.0	67.2	62.9	76.9	247.9
10	3	Babcock (B-380)	3.73	5.03	0.0	1.0	4.3	27.3	67.4	26.9	167.9	68.3	81.7	77.4	68.0	66.7	77.0	252.4
11	3	Tatum (T-173)	3.51	4.81	0.0	1.4	6.1	27.7	64.8	26.8	167.0	67.4	79.9	73.9	63.8	63.0	73.9	239.1
12	3	Tatum (T-100)	2.85	4.07	0.0	1.7	6.8	34.6	56.8	26.2	168.2	67.6	83.4	78.8	67.0	63.5	77.2	244.2
0	3	Average	3.15	4.40	0.1	2.6	8.3	35.2	53.9	26.0	169.4	67.2	82.4	77.4	67.9	66.3	77.0	247.5
54 Sq. In./Bird																		
1	4	Hy-Line (W-36)	2.76	3.74	0.1	5.5	13.9	41.4	39.1	24.9	175.8	58.9	73.0	72.3	64.8	64.5	71.6	222.2
2	4	Dekalb (XL Link)	2.86	3.80	0.0	3.1	10.3	44.1	42.5	25.4	170.7	62.7	80.6	76.8	65.0	64.8	75.1	234.9
3	4	Shaver (S-288)	3.02	4.09	0.1	2.0	7.3	36.2	54.3	26.0	169.2	67.5	82.0	78.7	66.3	65.2	76.7	231.2
4	4	Dekalb (Sex-Sal-Link G)	3.37	4.84	0.0	0.6	2.8	20.2	76.4	27.8	193.8	41.0	70.1	73.3	63.0	63.0	68.9	205.1
5	4	Babcock (B-3000V)	2.82	3.80	0.1	4.6	13.8	44.8	36.7	24.7	165.0	70.4	76.6	73.4	64.0	63.2	73.0	242.8
6	4	Hubbard (Gld. Comet)	3.53	4.56	0.0	2.4	8.1	32.0	57.4	26.1	166.6	66.0	77.0	74.6	65.6	64.4	73.5	225.4
7	4	H & N (p.g./Two)	2.83	3.78	0.1	3.9	11.7	45.6	38.7	25.0	168.5	66.4	79.2	74.3	66.8	68.8	74.8	232.0
8	4	Euribrid (Hisex Wh.)	2.80	3.65	0.4	4.9	14.0	45.3	35.4	24.6	164.8	73.9	79.7	76.8	66.6	67.5	75.9	245.3
9	4	Euribrid (Hisex Br.)	3.58	4.84	0.0	1.5	6.1	29.3	63.1	26.7	174.5	57.8	73.5	72.9	63.9	62.5	71.0	220.1
10	4	Babcock (B-380)	3.80	4.79	0.0	1.1	5.7	29.5	63.6	26.8	167.6	66.1	78.9	74.3	62.6	60.9	73.5	234.6
11	4	Tatum (T-173)	3.54	4.45	0.0	2.1	7.0	29.7	61.2	26.5	168.4	63.0	72.9	72.6	62.7	62.3	70.7	213.5
12	4	Tatum (T-100)	2.98	4.11	0.0	2.1	7.5	35.0	55.3	26.1	170.5	65.8	79.3	77.3	66.7	65.9	75.9	230.1
0	4	Average	3.16	4.20	0.1	2.8	9.0	36.1	52.0	25.9	171.3	63.3	76.9	74.8	64.8	64.4	73.4	228.1

TABLE 22-4D-I. Body Weight, Egg Size, Maturity and Production Rate

Entry No.	Treatment	Breeder	Average Body Weight		% Egg Size Distribution			Average Egg Wt. Oz./Doz.	Age at 50% Production Oz./Doz.	Egg Production Rate - % After 50% Production Days	Eggs Per Pullet Housed	
			497 Days	147 Days	Small	Medium	Large					
1	0	Hy-Line (W-36)	2.79	3.85	0.1	5.2	13.2	42.1	39.5	25.0	174.4	60.2
2	0	DeKab (XL Link)	2.87	3.86	0.1	3.4	10.8	44.2	41.5	25.3	169.8	65.9
3	0	Shaver (S-288)	3.00	4.13	0.1	2.1	7.3	36.0	54.5	26.1	168.2	69.5
4	0	DeKab (Sex-Sal-Link G)	3.38	5.01	0.0	0.5	2.6	19.5	77.5	27.9	189.9	44.9
5	0	Babcock (B-300V)	2.81	3.87	0.1	4.2	13.0	44.2	38.6	24.8	166.0	69.9
6	0	Hubbard (Gld. Comet)	3.56	4.69	0.0	2.0	1.7	31.6	59.2	26.3	166.2	67.7
7	0	H & N (p.g./Two)	2.84	3.83	0.1	3.6	11.5	45.3	39.5	25.1	168.2	67.9
8	0	Euribrid (Hisex Wh.)	2.78	3.70	0.4	5.2	13.7	44.8	35.9	24.7	163.7	76.0
9	0	Euribrid (Hisex Br.)	3.58	5.04	0.0	1.3	5.7	28.4	64.5	26.8	172.8	61.7
10	0	Babcock (B-380)	3.76	4.91	0.0	1.0	5.0	28.4	65.5	26.8	167.8	67.2
11	0	Tatum (T-173)	3.53	4.63	0.0	1.7	6.5	28.7	63.0	26.6	167.7	65.2
12	0	Tatum (T-100)	2.91	4.09	0.0	1.9	7.2	34.8	56.1	26.1	169.4	66.7
0	0	Average	3.15	4.30	0.1	2.7	8.6	35.7	52.9	26.0	170.3	65.2
											79.6	76.1
											66.4	65.4
											75.2	237.8

TABLE 22-4D-II. Birds, Mortality, Feed Use, Cost, and Income Data

Number of Birds	Mortality	Feed Consumed	Entry No.		Value per Pullet Housed													
			Treatment	At One Week														
1	0	866	837	756	2.7	9.5	16.8	15.0	22.3	2.48	3.88	0.39	1.21	7.16	8.76	9.97	0.36	1.571
2	0	860	839	757	2.1	9.5	16.7	15.0	23.8	2.45	3.86	0.39	1.21	7.59	9.20	10.54	0.36	1.704
3	0	676	655	564	3.3	13.7	25.3	15.8	25.7	2.55	4.16	0.40	1.28	7.91	9.60	10.36	0.37	1.131
4	0	889	832	757	5.8	8.8	13.0	16.8	25.3	2.70	4.71	0.41	1.39	8.17	9.97	9.53	0.47	0.028
5	0	854	841	790	1.3	6.0	7.1	14.5	22.8	2.45	3.81	0.39	1.21	7.46	9.05	10.59	0.37	1.909
6	0	859	840	723	1.9	13.2	20.6	17.2	25.4	2.56	4.21	0.39	1.39	7.96	9.75	10.43	0.42	1.104
7	0	776	757	644	2.2	15.2	24.9	15.3	23.8	2.51	3.94	0.39	1.23	7.40	9.02	10.18	0.33	1.489
8	0	863	837	756	2.7	9.2	13.8	14.9	23.6	2.44	3.76	0.39	1.21	7.66	9.25	10.63	0.34	1.717
9	0	857	839	751	2.0	10.2	15.6	17.1	25.5	2.62	4.39	0.39	1.37	8.12	9.88	10.26	0.47	0.852
10	0	758	752	690	0.8	8.0	11.8	18.2	26.7	2.66	4.46	0.39	1.45	8.52	10.35	10.55	0.46	0.657
11	0	878	842	716	3.8	14.4	23.6	17.0	25.5	2.65	4.42	0.40	1.39	8.09	9.89	9.97	0.41	0.492
12	0	747	720	627	3.3	12.7	25.7	15.8	24.7	2.49	4.07	0.40	1.28	7.86	9.54	10.24	0.37	1.072
0	0	824	800	711	2.7	10.9	17.9	16.0	24.6	2.55	4.14	0.40	1.30	7.82	9.52	10.27	0.39	1.144

TABLE 22-4A-FII. Birds, Mortality, Feed Use, Cost, and Income Data

Entry No.	Treatment	At One Week	At End of Test	Housed	% 8-147 Days	% 148-497 Days	Ave. Days Lost/ 1-147 Days	Per Bird (One Day) Per 100 Birds	Per Pound of Eggs	Per Dozen Eggs	Chick Price	Growing Feed Cost	Laying Feed Cost	Total Feed and Chick Cost	Value of Eggs	Value of Meat	IOFCC	
1	1	145	140	120	2.9	13.5	26.5	13.7	22.2	2.43	3.71	0.40	1.12	6.98	8.51	9.99	0.34	1.820
2	1	142	140	123	1.4	12.1	21.8	13.8	23.0	2.45	3.76	0.39	1.11	7.28	8.78	10.30	0.34	1.860
3	1	108	107	92	0.5	13.9	30.8	15.4	24.9	2.53	4.02	0.39	1.22	7.68	9.28	10.16	0.35	1.226
4	1	141	141	129	0.3	8.1	11.5	15.5	25.8	2.64	4.49	0.39	1.27	8.26	9.92	10.26	0.48	0.817
5	1	144	142	133	1.3	6.6	5.9	14.1	22.1	2.42	3.66	0.39	1.17	7.34	8.91	10.64	0.36	2.093
6	1	141	140	130	0.6	6.5	8.4	16.4	24.2	2.50	4.00	0.39	1.32	7.85	9.55	10.76	0.44	1.649
7	1	131	129	114	1.8	12.7	23.4	15.2	23.6	2.48	3.76	0.39	1.22	7.45	9.06	10.47	0.33	1.738
8	1	145	141	123	2.6	12.8	19.1	14.7	23.0	2.46	3.72	0.39	1.18	7.34	8.91	10.19	0.33	1.606
9	1	139	139	126	0.3	7.7	11.7	15.5	25.7	2.58	4.19	0.39	1.23	8.25	9.85	10.91	0.49	1.552
10	1	128	127	116	0.7	8.4	10.2	16.8	27.2	2.67	4.43	0.39	1.34	8.75	10.48	10.92	0.47	0.914
11	1	142	140	123	1.0	12.1	18.0	15.3	24.8	2.65	4.26	0.39	1.23	7.78	9.40	10.20	0.40	1.201
12	1	128	124	108	3.4	12.7	29.6	15.9	23.9	2.40	3.80	0.40	1.28	7.38	9.07	10.46	0.36	1.754
0	1	136	134	120	1.4	10.6	17.7	15.2	24.2	2.52	3.98	0.39	1.23	7.80	9.31	10.44	0.39	1.519
	Breeder	Program	Feed															
1	2	141	139	124	1.4	10.9	20.1	15.5	22.5	2.49	3.83	0.39	1.25	7.21	8.85	10.07	0.37	1.587
2	2	143	140	129	1.4	7.7	13.6	13.8	24.2	2.47	3.81	0.39	1.11	7.84	9.35	10.77	0.36	1.779
3	2	105	104	96	0.5	7.8	18.9	15.4	24.7	2.44	3.90	0.39	1.22	7.76	9.37	10.80	0.38	1.808
4	2	140	140	124	0.3	10.4	20.2	15.9	26.0	2.63	4.51	0.39	1.27	8.39	10.04	9.97	0.47	0.405
5	2	142	140	133	1.3	5.2	7.0	14.2	23.2	2.54	3.87	0.39	1.18	7.62	9.19	10.58	0.37	1.761
6	2	142	141	121	0.6	13.8	23.4	16.4	25.1	2.59	4.12	0.39	1.32	7.92	9.63	10.38	0.42	1.172
7	2	130	127	110	2.0	13.2	18.4	15.3	22.8	2.51	3.85	0.39	1.22	7.33	8.95	10.11	0.33	1.494
8	2	143	139	125	2.7	9.9	16.1	14.7	24.0	2.49	3.75	0.39	1.18	7.79	9.37	10.65	0.34	1.620
9	2	141	140	126	0.4	9.4	16.5	15.5	25.9	2.63	4.33	0.39	1.23	8.35	9.95	10.56	0.47	1.081
10	2	127	126	113	0.7	9.4	11.4	16.8	26.1	2.58	4.26	0.39	1.34	8.38	10.11	10.80	0.46	1.153
11	2	144	142	132	1.3	7.0	14.3	15.6	24.8	2.55	4.15	0.39	1.25	8.34	9.98	10.55	0.44	1.012
12	2	123	119	96	3.4	19.0	41.3	15.9	23.8	2.50	3.96	0.40	1.28	7.36	9.04	9.67	0.32	0.949
0	2	135	119	119	1.3	10.3	18.3	15.4	24.4	2.53	4.03	0.39	1.24	7.86	9.49	10.41	0.40	1.318

TABLE 22-4B-FII. Birds, Mortality, Feed Use, Cost, and Income Data

Entry No.	Treatment	Number of Birds		Mortality		Feed Consumed		Ave. Days Lost/ Hen Housed	Per Bird 1-147 Days	Per 100 Birds (One Day)	Per Pound of Eggs	Per Dozen Eggs	Chick Price	Growing Feed Cost	Laying Feed Cost	Total Feed and Chick Cost	Value of Eggs	Value of Meat	Value Per Pullet Housed
		At One Week Housed	At End of Test	% 8-147 Days	% 148-497 Days														
-15-																			
1	3	146	139	124	4.3	10.1	14.3	15.7	22.6	2.48	3.93	0.40	1.28	7.24	8.93	10.12	0.35	1.545	
2	2	142	140	128	1.2	8.1	11.2	15.4	23.6	2.43	3.85	0.39	1.24	7.62	9.25	10.76	0.37	1.884	
3	3	107	104	91	2.6	12.4	13.8	16.2	26.5	2.49	4.13	0.39	1.32	8.50	10.21	11.11	0.39	1.293	
4	4	151	139	127	6.7	8.4	11.2	17.2	25.1	2.64	4.64	0.41	1.43	7.96	9.81	9.63	0.46	0.284	
5	3	140	139	127	0.5	7.8	10.8	14.1	23.4	2.48	3.88	0.39	1.17	7.58	9.14	10.50	0.36	1.725	
6	3	143	139	117	2.4	14.9	25.9	18.0	26.3	2.62	4.35	0.39	1.47	7.99	9.85	10.30	0.42	0.869	
7	3	122	118	100	3.4	15.2	25.3	15.6	24.5	2.65	4.18	0.40	1.28	7.59	9.28	10.08	0.35	1.150	
8	3	144	140	128	3.7	7.7	8.7	15.4	23.2	2.46	3.81	0.40	1.25	7.57	9.23	10.65	0.35	1.770	
9	3	147	139	122	5.2	12.5	20.5	17.7	25.7	2.65	4.42	0.40	1.46	7.95	9.82	10.11	0.45	0.743	
10	3	126	125	110	0.2	12.0	18.1	19.2	26.4	2.64	4.44	0.38	1.53	8.23	10.14	10.30	0.42	0.583	
11	3	152	140	113	6.9	17.5	28.5	18.0	26.1	2.70	4.56	0.41	1.49	7.89	9.79	9.39	0.39	0.391	
12	3	121	118	102	1.8	13.5	25.4	15.8	25.9	2.51	4.18	0.39	1.26	8.01	9.67	10.37	0.37	1.074	
0	3	137	132	116	3.2	11.7	17.8	16.5	24.9	2.56	4.20	0.40	1.35	7.84	9.59	10.31	0.39	1.109	
Breeder Program Feed																			
1	4	144	139	132	3.2	5.0	11.2	14.7	22.6	2.53	3.98	0.40	1.19	7.38	8.98	10.06	0.37	1.455	
2	4	145	140	129	3.3	7.9	14.5	15.8	23.5	2.40	3.81	0.40	1.27	7.58	9.24	10.58	0.36	1.697	
3	4	116	109	91	6.6	16.6	30.5	16.4	26.1	2.58	4.19	0.41	1.35	7.77	9.54	10.43	0.35	1.245	
4	4	144	140	126	2.7	10.4	16.6	17.1	25.2	2.73	4.75	0.39	1.39	8.21	10.00	9.31	0.46	-0.227	
5	4	143	140	130	1.7	7.3	7.0	14.6	22.8	2.39	3.77	0.39	1.22	7.43	9.04	10.89	0.38	2.230	
6	4	146	140	123	3.8	12.1	18.4	17.5	25.5	2.50	4.14	0.40	1.43	8.14	9.97	10.86	0.41	1.299	
7	4	125	124	102	1.0	17.7	29.2	15.3	24.4	2.57	4.06	0.39	1.23	7.38	9.01	9.99	0.32	1.304	
8	4	141	137	126	2.3	7.3	12.6	15.0	23.7	2.35	3.65	0.39	1.22	7.70	9.32	10.99	0.35	2.025	
9	4	145	140	117	3.6	15.8	23.9	17.8	25.6	2.65	4.49	0.40	1.45	8.00	9.85	9.86	0.44	0.450	
10	4	123	121	116	1.4	4.2	7.1	19.1	26.7	2.67	4.50	0.39	1.53	8.59	10.51	10.59	0.47	0.549	
11	4	144	140	113	2.7	18.5	33.0	17.8	26.0	2.65	4.48	0.40	1.45	8.26	10.11	9.79	0.39	0.075	
12	4	123	117	106	5.0	9.2	19.3	15.7	24.9	2.51	4.14	0.40	1.28	8.26	9.95	10.31	0.39	0.755	
0	4	137	132	118	3.1	11.0	18.6	16.4	24.8	2.54	4.16	0.40	1.33	7.89	9.62	10.30	0.39	1.071	

TABLE 22-4D-FII. Birds, Mortality, Feed Use, Cost, and Income Data

Entry No.	Treatment	At One Week Housed	At End of Test	Ave. Days Lost/ Hen Housed	% 8-147 Days	% 148-497 Days	Per Bird 1-147 Days	Per 100 Birds (One Day)	Per Pound of Eggs	Per Dozen Eggs	Chick Price	Growing Feed Cost	Laying Feed Cost	Total Feed and Chick Cost	Value of Eggs	Value of Meat	IOFC	Value Per Pullet Housed		
Phased Feed																				
1	1,3,5	436	419	370	3.5	11.3	18.1	14.6	22.2	2.47	3.87	0.40	1.19	7.09	8.68	9.96	0.35	1.626		
2	1,3,5	430	420	379	1.7	9.6	16.0	14.8	23.5	2.45	3.86	0.39	1.20	7.52	9.10	10.53	0.36	1.787		
3	1,3,5	333	324	282	3.0	12.8	22.0	16.0	25.9	2.54	4.17	0.40	1.29	8.15	9.84	10.50	0.37	1.032		
4	1,3,5	443	416	378	7.2	9.0	12.9	16.9	25.3	2.71	4.72	0.42	1.40	8.02	9.85	9.55	0.47	0.167		
5	1,3,5	426	421	392	1.2	6.6	8.5	14.4	22.8	2.45	3.81	0.39	1.20	7.44	9.04	10.52	0.38	1.858		
6	1,3,5	429	419	358	1.4	13.6	21.1	17.3	25.5	2.59	4.25	0.39	1.39	7.90	9.68	10.34	0.42	1.080		
7	1,3,5	389	379	329	2.6	13.7	23.7	15.3	24.1	2.51	3.93	0.39	1.24	7.52	9.12	10.35	0.32	1.549		
8	1,3,5	432	421	379	2.7	9.7	14.2	15.0	23.2	2.44	3.77	0.39	1.21	7.47	9.08	10.47	0.35	1.736		
9	1,3,5	429	419	380	2.1	9.2	14.2	17.0	25.5	2.62	4.37	0.39	1.37	8.07	9.83	10.31	0.47	0.954		
10	1,3,5	378	376	345	0.6	8.1	11.5	18.3	26.8	2.65	4.44	0.39	1.46	8.56	10.41	10.65	0.46	0.702		
11	1,3,5	440	420	352	3.7	15.4	23.9	16.9	25.5	2.70	4.49	0.40	1.38	7.86	9.63	9.84	0.40	0.606		
12	1,3,5	375	361	314	2.9	12.8	25.1	15.9	24.8	2.48	4.06	0.40	1.28	7.73	9.39	10.32	0.36	1.290		
0	1,3,5	412	400	355	2.7	11.0	17.6	16.0	24.6	2.55	4.14	0.40	1.30	7.78	9.47	10.28	0.39	1.199		
Breeder Program Feed																				
1	2,4,6	430	418	386	1.9	7.7	15.6	15.3	22.3	2.49	3.90	0.39	1.22	7.23	8.84	9.99	0.37	1.516		
2	2,4,6	430	419	378	2.6	9.4	17.5	15.2	24.0	2.45	3.88	0.39	1.22	7.66	9.28	10.54	0.36	1.620		
3	2,4,6	343	331	282	3.7	14.7	28.5	15.5	25.5	2.57	4.16	0.40	1.28	7.67	9.35	10.22	0.36	1.230		
4	2,4,6	446	416	379	4.4	8.6	13.1	16.8	25.3	2.69	4.70	0.40	1.39	8.31	10.10	9.52	0.47	-0.110		
5	2,4,6	428	420	398	1.4	5.3	5.7	14.6	22.8	2.45	3.81	0.39	1.21	7.47	9.08	10.66	0.38	1.959		
6	2,4,6	430	421	365	2.4	12.8	20.2	17.1	25.2	2.54	4.17	0.39	1.38	8.03	9.81	10.52	0.42	1.128		
7	2,4,6	387	378	315	1.8	16.6	26.1	15.3	23.6	2.51	3.95	0.39	1.23	7.28	8.90	10.01	0.32	1.429		
8	2,4,6	431	416	377	2.7	8.8	13.4	14.8	24.1	2.43	3.76	0.39	1.20	7.85	9.44	10.79	0.35	1.699		
9	2,4,6	428	420	371	1.9	11.2	17.1	17.1	25.5	2.62	4.40	0.39	1.38	8.16	9.93	10.23	0.46	0.750		
10	2,4,6	380	376	345	0.9	7.9	12.0	18.1	26.6	2.67	4.48	0.39	1.45	8.47	10.31	10.46	0.46	0.612		
11	2,4,6	438	422	364	3.8	13.4	23.4	17.0	25.4	2.61	4.35	0.40	1.41	8.32	10.14	10.10	0.42	0.379		
12	2,4,6	372	359	313	3.8	12.6	26.3	15.8	24.5	2.49	4.08	0.40	1.28	7.99	9.67	10.15	0.37	0.855		
0	2,4,6	412	400	356	2.6	10.8	18.2	16.1	24.6	2.54	4.14	0.39	1.30	7.87	9.56	10.26	0.39	1.089		

TABLE 22-4C-FII. Birds, Mortality, Feed Use, Cost, and Income Data

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		Entry No.																	
		Treatment		Number of Birds		Mortality		Feed Consumed		Value Per Pullet Housed									
		At One Week		At End of Test		% 8-147 Days		% 148-497 Days		Growing Feed Cost									
		Housed																	
		Ave. Days Lost/ Hen Housed																	
		Per Bird 1-147 Days		Per 100 Birds (One Day)		Per Pound of Eggs		Per Dozen Eggs											
		Chick Price																	
		Laying Feed Cost																	
		Total Feed and Chick Cost																	
		Value of Eggs																	
		Value of Meat																	
		IOFCC																	
		Phased Feed																	
1	5	145	140	126	3.4	10.4	13.5	14.4	22.0	2.51	3.96	0.40	1.17	7.04	8.61	9.77	0.35	1.512	
2	5	143	140	128	2.3	8.5	15.0	15.4	24.0	2.46	3.95	0.39	1.24	7.66	9.29	10.54	0.37	1.619	
3	5	120	113	99	5.9	12.0	21.6	16.3	26.4	2.59	4.34	0.41	1.34	8.28	10.02	10.22	0.38	0.576	
4	5	160	136	122	14.6	10.3	15.9	17.5	25.0	2.85	5.04	0.45	1.50	7.85	9.81	8.75	0.46	-0.600	
5	5	143	140	132	1.9	5.4	8.9	15.1	22.7	2.46	3.88	0.39	1.25	7.39	9.02	10.40	0.38	1.756	
6	5	142	140	111	1.1	19.4	29.4	17.4	25.9	2.65	4.42	0.39	1.40	7.85	9.64	9.96	0.40	0.721	
7	5	136	132	115	2.6	13.3	24.5	15.0	24.2	2.39	3.84	0.39	1.21	7.51	9.11	10.52	0.35	1.759	
8	5	143	140	128	1.8	8.5	14.9	14.9	23.4	2.41	3.78	0.39	1.20	7.48	9.08	10.56	0.35	1.832	
9	5	143	141	130	0.8	7.2	10.8	17.9	25.1	2.64	4.50	0.39	1.41	8.02	9.81	9.91	0.47	0.568	
10	5	125	124	119	1.0	4.0	6.3	19.0	26.9	2.63	4.45	0.39	1.51	8.71	10.61	10.73	0.49	0.609	
11	5	146	140	116	3.3	16.7	25.1	17.4	25.8	2.76	4.66	0.40	1.41	7.90	9.72	9.54	0.40	0.225	
12	5	123	119	104	3.4	12.2	20.2	15.9	24.8	2.54	4.20	0.40	1.28	7.79	9.47	10.14	0.37	1.043	
0	5	139	134	119	3.5	10.7	17.2	16.4	24.7	2.57	4.25	0.40	1.33	7.79	9.52	10.09	0.40	0.968	
		Breeder Program Feed																	
1	6	142	140	130	1.3	7.1	15.3	15.7	21.9	2.45	3.89	0.39	1.22	7.09	8.69	9.83	0.37	1.507	
2	6	144	139	120	3.1	12.7	24.3	16.1	24.4	2.49	4.02	0.40	1.29	7.55	9.24	10.27	0.35	1.384	
3	6	122	117	94	4.1	19.8	39.2	14.8	25.7	2.68	4.39	0.40	1.25	7.49	9.14	9.44	0.34	0.636	
4	6	152	136	129	10.2	5.1	6.8	17.3	24.6	2.70	4.83	0.43	1.50	8.34	10.27	9.28	0.48	-0.508	
5	6	142	140	135	1.2	3.5	3.2	14.9	22.5	2.43	3.79	0.39	1.24	7.37	8.99	10.50	0.38	1.886	
6	6	144	140	122	2.8	12.5	19.3	17.5	25.1	2.54	4.24	0.40	1.41	8.03	9.84	10.34	0.41	0.911	
7	6	130	127	103	2.4	19.0	30.6	15.2	23.5	2.47	3.93	0.39	1.23	7.14	8.75	9.93	0.31	1.488	
8	6	145	140	126	3.2	9.2	8.3	14.8	24.5	2.45	3.88	0.40	1.20	8.04	9.64	10.73	0.36	1.450	
9	6	143	140	128	1.7	8.3	10.7	18.1	25.0	2.59	4.40	0.39	1.45	8.15	9.99	10.23	0.48	0.717	
10	6	130	129	116	0.6	10.2	16.3	18.4	26.9	2.75	4.69	0.39	1.47	8.44	10.31	9.99	0.45	0.135	
11	6	152	140	119	7.5	14.8	22.9	17.7	25.5	2.62	4.43	0.42	1.53	8.37	10.31	9.95	0.41	0.049	
12	6	127	123	111	3.0	9.5	15.6	15.8	24.8	2.47	4.13	0.40	1.28	8.33	10.00	10.47	0.39	0.860	
0	6	139	134	119	3.4	11.0	17.7	16.3	24.5	2.55	4.22	0.40	1.34	7.86	9.59	10.08	0.39	0.876	

TABLE 22-4D-CII. Birds, Mortality, Feed Use, and Cost and Income Data

Entry No.	Cage Type	At One Week	At End of Test	Housed	% 8-147 Days	% 148-497 Days	Ave. Days Lost/ Hen Housed	Per Bird (One Day)	Per 100 Birds (One Day)	Per Pound of Eggs	Per Dozen Eggs	Chick Price	Growing Feed Cost	Laying Feed Cost	Chick Cost and Feed	Value of Eggs	Value of Meat	IOFCC	Value Per Pullet Housed			
Shallow Cages	Deep Cages	Shallow Cages	Deep Cages																			
1 S	429	417	374	2.7	9.9	15.8	14.9	22.7	2.49	3.87	0.39	1.21	7.31	8.91	10.24	0.36	1.692	-18-				
2 S	430	419	368	2.4	11.7	21.1	15.0	22.4	2.45	3.84	0.39	1.21	7.70	9.31	10.74	0.35	1.784					
3 S	344	335	290	2.6	13.3	21.4	15.6	25.8	2.52	4.09	0.39	1.27	8.05	9.71	10.67	0.37	1.334					
4 S	432	412	371	4.3	9.4	14.9	16.6	25.7	2.67	4.63	0.40	1.37	8.28	10.06	9.83	0.48	0.249					
5 S	423	420	391	0.7	7.1	9.6	14.4	23.3	2.47	3.85	0.39	1.20	7.58	9.17	10.69	0.38	1.900					
6 S	429	419	370	2.3	11.2	16.7	17.1	25.6	2.57	4.21	0.39	1.39	8.13	9.91	10.68	0.42	1.193					
7 S	399	390	333	2.1	15.3	26.0	15.2	23.9	2.45	3.84	0.39	1.23	7.39	9.00	10.41	0.33	1.738					
8 S	431	420	376	2.4	10.1	15.7	15.0	23.9	2.43	3.75	0.39	1.21	7.70	9.30	10.73	0.34	1.769					
9 S	430	419	366	2.5	12.3	19.1	16.9	25.6	2.60	4.34	0.39	1.37	8.08	9.84	10.33	0.46	0.953					
10 S	372	370	332	0.5	10.2	14.6	18.2	27.3	2.70	4.51	0.39	1.45	8.62	10.46	10.56	0.46	0.563					
11 S	440	420	344	4.2	17.8	28.4	17.2	26.1	2.67	4.43	0.40	1.42	8.16	9.97	10.08	0.39	0.497					
12 S	370	357	318	3.7	10.6	19.9	15.8	25.1	2.51	4.10	0.40	1.27	8.13	9.80	10.55	0.37	1.117					
0 S	411	400	353	2.5	11.6	18.6	16.0	25.0	2.54	4.12	0.39	1.30	7.93	9.62	10.46	0.39	1.232					

TABLE 22-4D-SII. Birds, Mortality, Feed Use, and Cost and Income Data

	Entry No.	Birds/cage	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 Birds (One Day)	Per Pound of Eggs	Per Dozen Eggs	Chick Price	Growing Feed Cost	Laying Feed Cost	Total Feed and Chick Cost	Value of Eggs	Value of Meat
<u>72 sq. in./bird</u>																				
1	3	368	357	327	2.7	8.4	15.0	15.0	22.8	2.46	3.87	0.39	1.20	7.35	8.94	10.32	0.37	1.751		
2	3	371	360	333	2.6	7.5	14.6	15.1	24.5	2.43	3.83	0.39	1.22	7.87	9.48	11.00	0.37	1.891		
3	3	341	329	300	3.4	8.8	16.7	15.5	25.5	2.48	4.05	0.40	1.27	8.06	9.73	10.77	0.39	1.432		
4	3	377	356	329	5.3	7.6	10.7	16.8	25.9	2.61	4.58	0.41	1.40	8.45	10.26	10.14	0.49	0.373		
5	3	366	361	339	1.2	6.1	6.8	14.3	23.1	2.44	3.81	0.39	1.19	7.57	9.14	10.78	0.38	2.022		
6	6	368	360	331	2.2	8.1	10.6	17.0	26.0	2.56	4.22	0.39	1.37	8.44	8.20	11.05	0.45	3.304		
7	7	363	354	304	2.5	14.4	25.0	15.2	24.0	2.46	3.87	0.39	1.23	7.45	9.08	10.41	0.34	1.672		
8	8	373	360	338	3.3	6.1	7.9	15.0	24.2	2.43	3.76	0.40	1.21	7.95	9.56	11.03	0.36	1.832		
9	9	367	359	334	2.1	7.0	11.0	17.1	26.4	2.58	4.33	0.39	1.37	8.51	10.27	10.96	0.50	1.189		
10	10	361	358	337	0.7	5.9	7.3	18.3	26.7	2.58	4.35	0.39	1.46	8.62	10.46	10.99	0.48	1.015		
11	11	381	361	323	4.6	10.5	13.4	17.0	26.3	2.65	4.45	0.41	1.41	8.61	10.42	10.53	0.44	0.546		
12	12	349	336	306	3.7	9.1	19.6	15.8	24.9	2.48	4.06	0.40	1.28	8.07	9.74	10.57	0.38	1.207		
0	3	365	354	325	2.9	8.3	13.2	16.0	25.0	2.51	4.10	0.40	1.30	8.08	9.77	10.71	0.41	1.353		
<u>54 sq. in./bird</u>																				
1	4	494	480	429	2.7	10.6	18.7	14.9	21.8	2.51	3.90	0.39	1.22	6.97	8.57	9.62	0.34	1.391		
2	4	488	479	424	1.7	11.5	18.9	14.9	23.1	2.46	3.91	0.39	1.20	7.31	8.89	10.07	0.34	1.517		
3	4	337	326	264	3.3	18.7	34.8	16.0	26.0	2.63	4.28	0.40	1.30	7.77	9.46	9.95	0.34	0.830		
4	4	511	476	428	6.3	10.0	16.7	16.8	24.6	2.78	4.84	0.41	1.39	7.88	9.69	8.93	0.44	-0.316		
5	4	488	480	451	1.4	5.8	7.4	14.8	22.5	2.46	3.84	0.39	1.23	7.35	8.95	10.37	0.37	1.795		
6	4	488	480	392	1.6	17.9	30.7	17.4	24.7	2.57	4.20	0.39	1.41	7.49	9.30	9.82	0.38	0.903		
7	4	412	403	340	1.9	16.2	25.5	15.4	23.7	2.56	4.00	0.39	1.24	7.35	8.98	9.96	0.33	1.306		
8	4	488	477	418	2.1	12.1	19.7	14.9	23.1	2.44	3.77	0.39	1.20	7.36	8.91	10.18	0.33	1.602		
9	4	490	480	417	1.9	12.9	20.0	17.1	24.6	2.66	4.44	0.39	1.37	7.72	9.52	9.60	0.43	0.515		
10	4	398	394	353	0.8	10.4	16.2	18.2	26.7	2.74	4.58	0.39	1.45	8.42	10.23	10.09	0.44	0.300		
11	4	497	481	393	3.0	18.3	33.9	16.9	24.7	2.66	4.40	0.40	1.37	7.57	9.34	9.41	0.37	0.438		
12	4	396	384	321	3.0	16.6	31.0	15.3	24.4	2.50	4.07	0.40	1.28	7.64	9.30	9.89	0.35	0.939		
0	4	457	445	386	2.5	13.4	22.6	16.1	24.2	2.58	4.18	0.39	1.30	7.57	9.27	9.83	0.37	0.935		

TABLE 22-4A-FIII. Egg Quality Data

TABLE 22-4B-FIII. Egg Quality Data

Entry No. Treatment	% Inclusions (Break-out)				Candled Quality Percentages				Haugh Units				Shell Score (Specific Gravity)								
	Large Bloods		Small Bloods		Large Meats		Small Meats		A or Better		B		C Quality		Chex and Cracks		Loss Eggs				
1	2.7	0.7	0.9	0.2	0.4	96.0	0.4	0.1	3.0	0.4	107.1	80.8	74.3	69.0	82.8	1.09	1.47	1.31	1.85	1.43	
2	4.4	0.6	0.8	0.3	0.3	93.3	1.8	0.2	4.4	0.3	94.2	86.4	79.4	77.0	84.3	1.15	1.20	1.09	1.36	1.20	
3	5.5	1.1	0.3	0.2	0.8	92.5	1.1	0.3	4.8	1.3	92.1	85.1	79.7	74.5	82.8	0.56	0.98	0.80	1.15	0.87	
4	4.4	1.5	2.5	9.7	9.2	93.6	0.3	0.2	4.7	1.1	99.9	86.0	83.4	77.9	86.8	0.54	0.59	0.51	0.89	0.63	
5	4.5	0.7	1.1	0.1	0.4	94.0	0.6	0.1	4.0	1.4	97.9	82.9	80.8	73.4	83.7	1.35	1.90	1.60	2.30	1.79	
6	3.5	1.5	2.7	11.2	11.6	95.2	0.3	0.3	3.1	1.1	93.8	82.9	79.8	76.2	83.2	0.68	0.51	0.60	1.04	0.70	
7	3.2	1.1	1.2	0.2	0.8	95.0	1.5	0.5	2.7	0.2	96.4	83.9	79.7	74.7	83.7	1.23	1.76	1.47	2.04	1.63	
8	5.0	0.7	1.1	0.1	0.5	92.4	1.4	0.4	5.1	0.7	95.6	82.2	79.8	75.6	83.3	1.04	1.38	0.76	1.20	1.09	
9	3.8	1.5	2.1	7.0	11.4	94.8	0.4	0.1	3.6	1.2	94.1	84.3	79.0	69.1	81.6	0.68	0.90	0.93	1.10	0.90	
10	4.9	1.0	2.6	5.6	7.8	93.0	0.4	0.0	5.6	1.0	96.5	85.6	79.5	73.3	83.7	0.55	0.52	0.35	0.98	0.60	
11	2.8	1.3	3.0	9.3	13.4	95.6	0.3	0.0	3.8	0.3	96.7	83.4	78.8	77.9	84.2	0.68	0.63	0.75	1.14	0.80	
12	5.7	1.5	0.8	0.1	0.4	91.6	1.7	0.1	5.7	0.9	97.3	86.1	77.9	75.1	84.1	0.82	1.13	0.77	1.29	1.00	
0	3	4.2	1.1	1.6	3.7	4.7	93.9	0.8	0.2	4.2	0.8	96.8	84.1	79.3	74.5	83.7	0.86	1.08	0.91	1.36	1.05
<u>Breeder Program Feed</u>																					
1	2.8	0.3	0.8	0.3	0.2	96.1	0.6	0.0	2.4	0.9	90.6	81.9	73.2	70.9	79.2	0.92	1.57	1.48	1.62	1.40	
2	5.7	0.7	0.3	0.3	0.5	91.5	1.9	0.3	5.6	0.7	92.1	86.3	82.5	75.5	84.1	0.90	0.96	0.94	0.97	0.94	
3	4.1	0.8	0.4	0.8	0.3	95.6	2.1	0.2	3.3	0.8	95.9	84.2	81.6	73.3	83.8	0.86	0.89	0.82	1.29	0.96	
4	5.1	2.2	1.7	7.3	8.6	92.6	0.4	0.1	5.9	1.0	99.1	87.4	82.1	76.5	86.2	0.35	0.42	0.60	1.23	0.65	
5	4.2	0.6	0.4	0.1	0.3	96.7	0.4	0.2	2.5	0.3	93.5	81.8	79.3	73.6	82.1	1.60	2.04	1.70	2.01	1.84	
6	2.5	2.1	3.4	10.1	12.8	96.4	0.3	0.2	2.4	0.6	93.3	82.1	81.9	70.3	81.9	0.57	0.60	0.72	1.32	0.80	
7	4.4	0.9	1.1	0.1	0.5	93.3	2.0	0.9	3.2	0.6	94.8	85.3	80.7	74.9	83.9	1.01	1.49	1.41	1.33	1.31	
8	6.3	0.8	0.7	0.0	0.6	91.1	2.1	0.4	4.9	1.6	90.4	80.2	77.4	72.6	80.1	0.65	1.00	0.82	1.30	0.94	
9	3.5	1.9	1.1	8.5	10.9	94.9	0.3	0.2	4.1	0.6	95.0	81.8	78.1	72.6	81.9	0.56	0.91	0.98	1.05	0.87	
10	5.1	0.8	1.6	6.3	9.4	92.9	0.9	0.8	4.8	1.4	94.3	87.1	80.4	76.9	84.7	0.44	0.35	0.36	0.66	0.45	
11	2.9	1.9	13.8	11.2	95.8	0.3	0.2	3.1	0.6	90.8	80.7	78.7	73.5	80.9	0.50	0.57	0.78	1.17	0.75		
12	5.1	0.3	0.6	0.5	0.7	92.3	1.5	0.2	5.6	0.5	92.8	82.0	78.9	74.1	82.0	0.96	1.31	1.13	1.53	1.23	
0	4.2	1.2	4.0	4.7	93.9	1.1	0.2	4.2	0.8	93.6	83.4	79.6	73.7	82.6	0.78	1.01	0.98	1.29	1.01		

TABLE 22-4C-FIII. Egg Quality Data

Entry No.	Treatment	Loss % (Downgrades)		Candled Quality Percentages		Haugh Units		Shell Score (Specific Gravity)	
		A or Better	B	C Quality	D Quality	E	F	G	H
1	Small Bloods	5.2	0.5	0.5	0.7	0.4	0.4	96.7	0.4
2	Large Bloods	4.0	0.6	0.7	0.0	0.3	0.1	93.7	1.1
3	Small Meats	5.7	0.3	1.0	0.2	0.3	0.1	91.0	2.1
4	Large Meats	4.4	1.0	3.1	7.9	7.5	0.1	93.8	0.1
5	Small Bloods	3.0	0.5	0.6	0.1	0.4	0.8	95.4	0.8
6	Large Bloods	2.9	0.4	2.7	9.6	11.5	0.5	95.6	0.5
7	Small Meats	5.1	0.5	0.3	0.5	0.2	0.2	92.2	1.8
8	Large Meats	4.0	1.2	2.5	6.4	9.7	0.3	94.1	0.3
9	Small Bloods	5.1	0.9	2.4	6.7	8.0	0.2	93.1	0.2
10	Large Bloods	3.1	1.3	4.6	13.0	13.2	0.2	95.3	0.2
11	Small Meats	4.2	0.5	0.7	0.0	0.2	0.1	93.5	1.0
12	Large Meats	5	4.1	0.7	1.6	3.8	4.4	93.9	0.8
0	Small Bloods	5	4.1	0.7	1.6	3.8	4.4	91.4	0.6
1	Phased Feed	2.3	0.3	0.5	0.5	0.4	0.2	96.7	0.4
2	Program Feed	4.0	0.6	0.7	0.0	0.3	0.1	93.7	0.5
3	Breeder Program Feed	5.6	0.6	0.7	0.2	0.4	0.4	91.5	0.6
4	Small Bloods	3.7	1.2	2.8	8.5	9.7	0.2	94.2	0.1
5	Large Bloods	4.4	0.8	0.2	0.2	0.3	0.7	93.5	0.7
6	Small Meats	3.6	1.5	3.4	10.3	12.3	0.6	94.4	0.6
7	Large Meats	3.6	0.4	0.8	0.1	0.5	0.5	93.9	1.6
8	Small Bloods	7.6	0.6	0.2	0.1	0.4	0.4	88.5	2.6
9	Large Bloods	2.9	1.7	2.5	7.9	7.5	0.9	95.9	0.1
10	Small Meats	4.6	1.1	3.5	6.3	10.5	0.5	93.3	0.3
11	Large Meats	2.7	0.8	3.8	9.8	10.6	0.4	96.0	0.4
12	Small Bloods	4.5	0.7	0.5	0.2	0.5	0.2	93.4	1.4
0	Large Bloods	4.1	0.9	1.6	3.7	4.5	4.5	93.7	1.0
1	Phased Feed	5	4.1	0.7	1.6	3.8	4.4	91.4	0.6
2	Program Feed	4.0	0.6	0.7	0.0	0.3	0.1	93.7	0.5
3	Breeder Program Feed	5.6	0.6	0.7	0.2	0.4	0.4	91.5	0.6
4	Small Bloods	3.7	1.2	2.8	8.5	9.7	0.2	94.2	0.1
5	Large Bloods	4.4	0.8	0.2	0.2	0.3	0.7	93.5	0.7
6	Small Meats	3.6	1.5	3.4	10.3	12.3	0.6	94.4	0.6
7	Large Meats	3.6	0.4	0.8	0.1	0.5	0.5	93.9	1.6
8	Small Bloods	7.6	0.6	0.2	0.1	0.4	0.4	88.5	2.6
9	Large Bloods	2.9	1.7	2.5	7.9	7.5	0.9	95.9	0.1
10	Small Meats	4.6	1.1	3.5	6.3	10.5	0.5	93.3	0.3
11	Large Meats	2.7	0.8	3.8	9.8	10.6	0.4	96.0	0.4
12	Small Bloods	4.5	0.7	0.5	0.2	0.5	0.2	93.4	1.4
0	Large Bloods	4.1	0.9	1.6	3.7	4.5	4.5	93.7	1.0
1	Phased Feed	5	4.1	0.7	1.6	3.8	4.4	91.4	0.6
2	Program Feed	4.0	0.6	0.7	0.0	0.3	0.1	93.7	0.5
3	Breeder Program Feed	5.6	0.6	0.7	0.2	0.4	0.4	91.5	0.6
4	Small Bloods	3.7	1.2	2.8	8.5	9.7	0.2	94.2	0.1
5	Large Bloods	4.4	0.8	0.2	0.2	0.3	0.7	93.5	0.7
6	Small Meats	3.6	1.5	3.4	10.3	12.3	0.6	94.4	0.6
7	Large Meats	3.6	0.4	0.8	0.1	0.5	0.5	93.9	1.6
8	Small Bloods	7.6	0.6	0.2	0.1	0.4	0.4	88.5	2.6
9	Large Bloods	2.9	1.7	2.5	7.9	7.5	0.9	95.9	0.1
10	Small Meats	4.6	1.1	3.5	6.3	10.5	0.5	93.3	0.3
11	Large Meats	2.7	0.8	3.8	9.8	10.6	0.4	96.0	0.4
12	Small Bloods	4.5	0.7	0.5	0.2	0.5	0.2	93.4	1.4
0	Large Bloods	4.1	0.9	1.6	3.7	4.5	4.5	93.7	1.0

TABLE 22-4D-FIII. Egg Quality Data

TABLE 22-4D-CIII. Egg Quality Data

Entry No.	Cage Type	Loss % (Downgrades)	Large Bloods	Small Bloods	Large Meats	Small Meats	Shallow Cages		Deep Cages		Shallow Score (Specific Gravity)		Deep Score (Specific Gravity)							
							A or Better	B	C Quality	D Quality	Cracks	Loss Eggs	October	November	December	January	February	March	April	May
1 S	2.1	0.7	0.4	0.3	96.9	0.4	2.2	0.5	90.9	80.2	77.5	66.9	78.9	0.69	1.44	1.14	1.33	1.15		
2 S	4.7	0.5	0.5	0.6	92.8	1.6	0.2	4.8	0.6	93.3	85.2	81.8	72.6	83.2	0.59	1.00	0.76	1.39	0.93	
3 S	5.4	0.6	0.4	0.3	91.9	1.9	0.2	4.8	1.3	92.0	82.5	82.6	72.8	82.5	0.58	1.12	0.75	1.00	0.86	
4 S	3.8	0.9	2.4	7.5	8.9	94.4	0.3	0.1	4.5	0.8	95.5	85.0	83.1	76.2	85.0	0.30	0.42	0.42	0.91	0.51
5 S	3.2	1.1	0.8	0.1	0.5	95.2	0.8	0.2	3.3	0.6	92.1	82.0	81.1	69.4	81.1	0.99	1.99	1.23	1.64	1.46
6 S	3.0	1.3	2.9	11.7	11.9	95.6	0.4	0.1	3.3	0.6	92.0	80.8	80.1	73.2	81.5	0.37	0.60	0.66	1.00	0.66
7 S	4.0	0.9	0.8	0.3	0.5	93.8	1.7	0.7	3.3	0.6	93.3	83.8	81.7	75.0	83.5	0.80	1.50	1.20	1.27	1.19
8 S	5.5	0.8	0.8	0.2	0.3	91.6	2.0	0.4	5.1	0.9	92.3	79.7	80.8	71.1	81.0	0.57	1.07	0.73	1.01	0.84
9 S	3.1	1.4	2.3	7.9	9.2	95.6	0.3	0.1	3.4	0.6	91.8	80.8	77.0	69.3	79.7	0.46	0.88	0.74	1.12	0.80
10 S	4.6	1.0	2.5	6.6	10.5	93.5	0.3	0.1	4.7	1.3	96.0	86.3	81.9	74.4	84.6	0.30	0.62	0.44	0.59	0.49
11 S	2.2	1.3	3.4	11.3	12.5	96.6	0.3	0.1	2.5	0.4	93.5	81.3	80.0	74.2	82.2	0.34	0.73	0.64	0.73	0.61
12 S	4.1	0.6	0.7	0.3	0.5	93.7	1.4	0.2	4.2	0.5	93.4	82.8	73.3	83.2	83.2	0.60	1.20	0.81	1.14	0.94
0 S	3.8	0.9	1.6	3.9	4.7	94.3	0.9	0.2	3.8	0.7	93.0	82.6	80.9	72.4	82.2	0.55	1.05	0.79	1.09	0.87
1 D	2.3	0.5	0.5	0.3	0.4	96.6	0.5	0.1	2.6	0.3	93.8	79.5	75.4	69.4	79.5	0.80	1.31	1.34	1.49	1.23
2 D	4.1	0.8	0.6	0.3	0.2	93.9	1.3	0.1	4.1	0.5	92.0	82.6	81.4	75.4	82.9	0.71	1.05	1.07	1.05	0.97
3 D	4.4	0.9	1.0	0.1	0.5	93.3	1.6	0.1	4.4	0.7	91.4	82.0	82.1	73.6	82.3	0.57	0.93	0.86	0.93	0.82
4 D	4.6	1.5	2.5	8.6	8.7	93.3	0.2	0.1	5.5	0.9	96.1	84.3	83.2	74.0	84.4	0.36	0.72	0.56	0.82	0.62
5 D	3.4	0.6	0.4	0.2	0.2	95.1	0.5	0.1	3.4	0.8	89.7	81.3	84.7	71.3	81.8	1.31	1.77	1.42	2.11	1.65
6 D	3.2	1.5	3.1	10.4	12.8	95.2	0.5	0.1	3.6	0.6	90.2	82.1	82.7	74.2	82.3	0.38	0.62	0.68	0.99	0.67
7 D	3.7	0.7	0.9	0.2	0.5	94.2	1.5	0.3	3.4	0.4	90.6	81.7	82.7	73.0	82.0	0.89	1.61	1.31	1.36	1.29
8 D	5.7	0.7	0.5	0.1	0.4	91.7	1.6	0.2	5.1	1.3	91.4	80.8	83.0	72.4	81.9	0.64	1.05	0.80	1.16	0.91
9 D	3.4	1.6	2.2	6.8	10.6	95.1	0.2	0.1	3.9	0.8	90.8	81.6	79.7	70.0	80.5	0.49	0.78	0.78	0.77	0.71
10 D	4.5	0.7	2.4	7.3	8.3	93.5	0.4	0.1	5.1	0.9	91.7	82.7	82.4	73.6	82.6	0.35	0.51	0.39	0.51	0.44
11 D	2.9	2.1	3.2	11.5	12.7	95.6	0.3	0.1	3.7	0.3	90.8	81.4	84.0	73.6	82.4	0.47	0.70	0.88	1.27	0.83
12 D	4.6	0.8	1.0	0.2	0.4	93.1	1.2	0.2	4.9	0.6	92.4	80.4	80.6	72.6	81.5	0.82	1.12	1.15	1.53	1.15
0 D	3.9	1.0	1.5	3.8	4.6	94.2	0.8	0.1	4.2	0.7	91.7	81.7	81.8	72.7	82.0	0.65	1.01	0.94	1.17	0.94

TABLE 22-4D-SII. Egg Quality Data

Entry No. Birds/Cage	% Inclusions (Break- Out)		Candled Quality Percentages		Haugh Units		Shell Score (Specific Gravity)
	Loss % (Downgrades)		Large Bloods	Small Bloods	Large Meats	Small Meats	
1	72 Sq. In./Bird	A or Better	October	January	April	June	Average
2		B					November
3		C Quality					February
4		Chex and Cracks					April
5		Loss Eggs					August
6							Average
7	54 Sq. In./Bird						
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TABLE 22-4D-III. Egg Quality Data

TWENTY-SECOND NORTH CAROLINA RANDOM SAMPLE LAYING TEST

Breeder	Stock Identification	Entry Category*	Source of Sample
Babcock Poultry Farm, Inc. Box 280 Ithaca, NY 14850	Babcock B-300V WL INX	I-A YES	Babcock Southeast P.O. Box 671 Gainesville, GA 30501
Babcock Poultry Farm, Inc. Box 280 Ithaca, NY 14850	Babcock B-380 SYN x SYN IBX	II YES	Babcock Poultry Farm, Inc. Box 280 Ithaca, NY 14850
DeKalb AgResearch, Inc. Sycamore Road DeKalb, IL 60115	DeKalb XL-Link WL 4wSX	I-A YES	Clay's Hatchery Route 1 Blackstone, VA 23824
DeKalb AgResearch, Inc. Sycamore Road DeKalb, IL 60115	DeKalb Sex-Sal-Link G RIR x SYN BX	I-A YES	Pee Dee Hatchery Box 156 Hartsville, SC 29550
Euribrid B. U. Entry by Pilch, Inc. Box 438 Troutman, NC 28677	Hisex White WL 4wSX	I-A YES	Gulf Coast Hatchery Quincy, FL 32351
Euribrid B. U. Entry by Pilch, Inc. Box 438 Troutman, NC 28677	Hisex Brown SYN x SYN 4wBX	II YES	Pilch, Inc. Box 438 Troutman, NC 28677
H & N, Inc. 15305 N.E. 40th Street Redmond, WA 98052	H & N "P.G./Two" WL 4wSX	I-A YES	Harrold's Hatchery Box 98 Winterville, GA 30683
Hubbard Farms, Inc. Walpole, NH 03608	Hubbard Golden Comet NH x SYN BX	I-A YES	Bowers Bros. Hatchery Route 4 Albemarle, NC 28001
Hy-Line International 1206 Mulberry Des Moines, IA 50309	Hy-Line W-36	I-C	Not Applicable
Shaver Poultry Breeding Farms, Inc. Box 400 Galt, Cambridge Ontario, CANADA NIR 5V9	Starcross 288 WL SX	I-A YES	Delta Hatcheries Box 769 Lake City, FL 32055
Tatum Farms Route 3 Dawsonville, GA 30532	Tatum T-100 WL SX	II YES	Tatum Farms Route 3 Dawsonville, GA 30532
Tatum Farms Route 3 Dawsonville, GA 30534	Tatum T-173 RIR x SYN BX	II YES	Tatum Farms Route 3 Dawsonville, GA 30534

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

YES = Supporting and fully cooperating with the test.

TABLE 22-4G&4D-IV Causes of Mortality - Growing and Entry Av. Laying

Entry No.	Type Housing	Lymphoid Leukosis	Reproductive Disorders	Other Causes	No Visible Lesions	No Necropsy Report	% Total Mortality
<u>Growing Period - Closed House</u>							
1	LAC	-	-	1.0	0.4	0.5	1.9
2	LAC	-	-	-	0.5	0.6	1.1
3	LAC	-	-	0.5	-	-	0.5
4	LAC	-	-	-	0.3	-	0.3
5	LAC	-	-	1.0	-	0.3	1.3
6	LAC	-	-	-	0.3	0.3	0.6
7	LAC	-	-	1.5	-	0.4	1.9
8	LAC	-	-	2.5	1.0	0.5	4.0
9	LAC	-	-	-	0.4	-	0.4
10	LAC	-	-	-	0.7	-	0.7
11	LAC	-	-	-	0.4	0.7	1.1
12	LAC	1.5	-	1.5	-	0.4	3.4
AV	LAC	0.1	-	0.7	0.3	0.3	1.4
<u>Growing Period - Curtain Side House</u>							
1	CS	0.2	-	1.2	0.8	0.5	2.8
2	CS	0.1	-	1.4	0.6	0.8	2.8
3	CS	-	-	1.3	1.3	2.4	5.0
4	CS	-	-	4.6	2.3	2.5	9.4
5	CS	-	-	0.5	0.2	0.7	1.3
6	CS	-	-	2.0	0.2	0.5	2.6
7	CS	-	-	1.0	0.4	1.0	2.4
8	CS	-	-	1.0	1.0	0.7	2.7
9	CS	-	-	1.3	0.3	1.2	2.8
10	CS	-	-	0.4	0.2	0.2	0.8
11	CS	-	-	3.1	0.8	1.8	5.7
12	CS	-	-	2.3	0.2	0.8	3.3
AV	CS	0.0	-	1.7	0.7	1.1	3.5
<u>Laying Period - Av. All Houses</u>							
1	0	2.5	2.8	1.6	1.1	1.7	9.7
2	0	1.1	4.8	0.5	1.3	2.1	9.7
3	0	1.8	5.3	1.8	1.2	3.7	13.8
4	0	0.5	3.2	1.6	1.0	2.7	8.9
5	0	1.2	1.3	0.7	1.0	1.9	6.1
6	0	-	6.2	2.8	1.2	3.8	13.9
7	0	2.4	4.9	1.1	2.4	4.3	15.0
8	0	0.2	3.2	1.0	1.9	3.3	9.6
9	0	-	2.5	2.1	1.7	4.2	10.5
10	0	0.1	2.2	1.5	1.3	3.0	8.2
11	0	-	7.7	1.7	1.5	4.0	15.0
12	0	2.1	5.8	1.0	1.5	2.5	12.9
AV	0	1.0	4.2	1.4	1.4	3.1	11.1

TABLE 22-4A-IVF & IVD Causes of Mortality - Laying Period Percentages

Entry No.	Treatment	Lymphoid Leukosis	Reproductive Disorders	Other Causes	No Visible Lesions	No Necropsy Report	% Total Mortality
<u>Phased Feed</u>							
1	1	2.9	3.6	2.9	2.1	2.9	14.3
2	1	2.9	5.0	-	2.1	2.1	12.1
3	1	3.7	4.7	1.9	0.9	2.8	14.0
4	1	-	2.1	2.1	0.7	3.5	8.5
5	1	-	1.4	2.1	0.7	2.1	6.3
6	1	-	3.6	-	0.7	2.9	7.1
7	1	3.9	2.3	1.6	1.6	2.3	11.6
8	1	-	3.5	2.8	0.7	5.7	12.8
9	1	-	2.9	0.7	-	4.3	7.9
10	1	-	1.6	0.8	0.8	5.5	8.7
11	1	-	5.0	2.1	0.7	4.3	12.1
12	1	2.4	4.8	1.6	2.4	1.6	12.9
AV	1	1.3	3.4	1.6	1.1	3.3	10.7
<u>Breeder Feed Program</u>							
1	2	3.6	2.9	1.4	0.7	2.2	10.8
2	2	0.7	2.1	1.4	2.1	1.4	7.9
3	2	1.0	3.8	1.9	-	1.0	7.6
4	2	-	2.9	2.1	1.4	5.0	11.4
5	2	1.4	1.4	0.7	0.7	0.7	5.0
6	2	-	3.5	5.0	2.1	3.5	14.2
7	2	0.8	6.3	0.8	1.6	3.9	13.4
8	2	0.7	2.2	1.4	2.9	2.9	10.1
9	2	-	2.9	2.9	2.9	1.4	10.0
10	2	0.8	6.3	3.2	-	-	10.3
11	2	-	0.7	2.1	2.1	2.1	7.0
12	2	2.5	10.9	0.8	3.4	1.7	19.3
AV	2	1.0	3.8	2.0	1.7	2.2	10.6
<u>Closed House Average</u>							
1	1&2	3.5	3.2	2.0	1.2	2.5	12.6
2	1&2	1.8	3.5	0.8	2.2	1.6	9.9
3	1&2	2.4	4.3	1.9	0.5	1.9	10.9
4	1&2	-	2.4	2.1	1.0	4.3	9.8
5	1&2	0.7	1.4	1.4	0.7	1.4	5.7
6	1&2	-	3.4	2.5	1.4	3.2	10.7
7	1&2	2.3	4.3	1.2	1.6	3.1	12.5
8	1&2	0.4	2.9	2.1	1.8	4.3	11.4
9	1&2	-	2.9	1.8	1.4	2.9	9.0
10	1&2	0.4	4.0	2.0	0.4	2.8	9.5
11	1&2	-	2.9	2.1	1.4	3.2	9.6
12	1&2	2.5	7.9	1.2	2.9	1.6	16.1
AV	1&2	1.1	3.6	1.8	1.4	2.7	10.6

TABLE 22-4B-IVF & IVD Causes of Mortality - Laying Period Percentages

Entry No.	Type Housing	Lymphoid Leukosis	Reproductive Disorders	Other Causes	No Visible Lesions	No Necropsy Report	% Total Mortality
<u>Phased Feed</u>							
1	3	0.7	4.3	1.4	2.2	2.2	10.8
2	3	-	5.0	0.7	1.4	1.4	8.6
3	3	1.0	3.8	-	1.0	6.7	12.5
4	3	0.7	2.9	1.4	-	3.6	8.6
5	3	1.4	2.9	0.7	1.4	2.2	8.6
6	3	-	9.4	4.3	-	2.2	15.8
7	3	2.5	2.5	1.7	3.4	5.1	15.3
8	3	-	3.6	-	1.4	3.6	8.6
9	3	-	2.2	2.9	3.6	3.6	12.2
10	3	-	2.4	1.6	2.4	5.6	12.0
11	3	-	12.1	0.7	-	6.4	19.3
12	3	2.5	5.1	1.7	-	4.2	13.6
AV	3	0.7	4.7	1.4	1.4	3.9	12.2
<u>Breeder Feed Program</u>							
1	4	2.2	2.9	-	-	-	5.0
2	4	1.4	2.9	0.7	1.4	1.4	7.9
3	4	2.8	7.3	2.8	0.9	2.8	16.5
4	4	1.4	5.7	1.4	-	1.4	10.0
5	4	1.4	-	0.7	0.7	4.3	7.1
6	4	-	5.7	2.9	0.7	2.9	12.1
7	4	1.6	5.6	1.6	2.4	6.5	17.7
8	4	-	1.5	1.5	2.9	2.2	8.0
9	4	-	2.9	4.3	1.4	7.9	16.4
10	4	-	0.8	0.8	0.8	1.7	4.1
11	4	-	12.1	1.4	2.9	2.9	19.3
12	4	0.9	5.1	-	0.9	2.6	9.4
AV	4	1.0	4.4	1.5	1.3	3.0	11.1
<u>High Rise House Average</u>							
1	3&4	1.4	3.6	0.7	1.1	1.1	7.9
2	3&4	0.7	3.9	0.7	1.4	1.4	8.2
3	3&4	1.9	5.6	1.4	0.9	4.7	14.5
4	3&4	1.1	4.3	1.4	-	2.5	9.3
5	3&4	1.4	1.4	0.7	1.1	3.2	7.9
6	3&4	-	7.5	3.8	0.4	2.5	14.0
7	3&4	2.1	4.1	1.7	2.9	5.8	16.5
8	3&4	-	2.5	0.7	2.2	2.9	8.3
9	3&4	-	2.5	3.6	2.5	5.7	14.3
10	3&4	-	1.6	1.2	1.6	3.6	8.1
11	3&4	-	12.1	1.1	1.4	4.6	19.3
12	3&4	1.7	5.1	0.8	0.4	3.4	11.5
AV	3&4	0.9	4.5	1.5	1.3	3.5	11.6

TABLE 22-4C-IVF & IVD Causes of Mortality - Laying Period Percentages

Entry No.	Type Housing	Lymphoid Leukosis	Reproductive Disorders	Other Causes	No Visible Lesions	No Necropsy Report	% Total Mortality
<u>Phased Feed</u>							
1	5	2.1	1.4	2.1	2.1	2.1	10.0
2	5	-	7.1	-	-	1.4	8.6
3	5	-	3.5	2.7	0.9	5.3	12.4
4	5	0.7	2.2	0.7	3.7	2.9	10.3
5	5	1.4	1.4	-	1.4	1.4	5.7
6	5	-	10.7	1.4	2.1	6.4	20.7
7	5	2.3	3.8	0.8	3.0	3.0	12.9
8	5	0.7	3.6	-	2.1	2.1	8.6
9	5	-	1.4	0.7	0.7	5.0	7.8
10	5	-	-	0.8	1.6	1.6	4.0
11	5	-	7.9	2.9	1.4	5.0	17.1
12	5	2.5	5.0	1.7	0.8	2.5	12.6
AV	5	0.8	4.0	1.1	1.7	3.2	10.9
<u>Breeder Feed Program</u>							
1	6	2.9	1.4	2.1	-	0.7	7.1
2	6	1.4	6.5	-	0.7	5.0	13.7
3	6	2.6	8.5	1.7	3.4	3.4	19.7
4	6	-	3.7	1.5	-	-	5.1
5	6	1.4	0.7	-	0.7	0.7	3.6
6	6	-	4.3	2.9	1.4	5.0	13.6
7	6	3.2	8.7	-	2.4	4.7	18.9
8	6	-	5.0	-	1.4	3.6	10.0
9	6	-	2.9	1.4	1.4	2.9	8.6
10	6	-	2.3	1.6	2.3	3.9	10.1
11	6	-	8.6	0.7	2.1	3.6	15.0
12	6	1.6	4.1	-	1.6	2.4	9.8
AV	6	1.1	4.7	1.0	1.5	3.0	11.3
<u>Flush-Waste House Average</u>							
1	5&6	2.5	1.4	2.1	1.1	1.4	8.6
2	5&6	0.7	6.8	-	0.4	3.2	11.1
3	5&6	1.3	6.0	2.2	2.2	4.4	16.0
4	5&6	0.4	2.9	1.1	1.8	1.5	7.7
5	5&6	1.4	1.1	-	1.1	1.1	4.6
6	5&6	-	7.6	2.1	1.8	5.7	17.1
7	5&6	2.7	6.2	0.4	2.7	3.9	15.9
8	5&6	0.4	4.3	-	1.8	2.7	9.3
9	5&6	-	2.1	1.1	1.1	3.9	8.2
10	5&6	-	1.2	1.2	2.0	2.7	7.1
11	5&6	-	8.2	1.8	1.8	4.3	16.1
12	5&6	2.1	4.6	0.8	1.2	2.5	11.2
AV	5&6	1.0	4.4	1.1	1.6	3.1	11.1

TABLE 22-4D-V Commercial Egg Gradeout

Entry No.	Treatment	Ex. Large & Jumbo	Percent Grade A or Better			% Breaker		% Loss Eggs	
			Large	Medium	Small & Pee Wee	Sound	Crax	Farm	Other
<u>November - 32 weeks old</u>									
1	0	1.0	32.9	54.7	5.2	2.3	2.3	0.4	1.2
2	0	3.1	44.7	40.6	2.6	2.0	2.6	3.1	1.3
3	0	7.8	57.6	24.0	1.6	1.4	3.0	3.7	0.9
4	0	22.1	59.7	9.3	0.1	0.6	3.2	2.8	2.2
5	0	1.8	46.4	42.4	2.0	1.8	1.9	2.1	1.7
6	0	7.7	56.4	28.0	1.2	0.6	2.4	2.7	1.0
7	0	2.0	43.1	39.5	2.6	0.9	2.8	8.3	0.8
8	0	1.8	39.7	41.3	3.9	4.8	3.7	3.0	1.7
9	0	10.9	60.3	22.0	0.7	0.8	3.0	1.5	0.7
10	0	11.7	64.6	17.4	0.3	0.2	4.5	0.5	1.0
11	0	9.5	57.0	24.0	1.1	0.8	2.5	3.1	2.0
12	0	9.1	56.1	24.9	0.5	1.5	3.0	2.6	2.2
AV	0	7.4	51.6	30.7	1.8	1.5	2.9	2.8	1.4
<u>February - 44 weeks old</u>									
1	0	14.1	58.2	15.6	0.3	3.0	5.2	1.4	2.1
2	0	19.6	53.7	13.7	0.3	2.1	7.5	0.4	2.9
3	0	30.1	47.6	6.8	0.1	2.9	7.0	2.0	3.4
4	0	59.0	28.3	1.0	0.0	0.6	7.1	0.7	3.3
5	0	14.3	59.5	15.5	0.2	1.9	6.3	0.2	2.0
6	0	39.7	46.0	3.9	0.1	0.6	5.9	0.8	3.0
7	0	14.8	57.5	15.7	0.1	1.1	6.5	0.9	3.4
8	0	13.9	57.9	15.3	0.2	1.4	8.3	0.7	2.4
9	0	42.6	43.9	3.8	0.1	0.4	4.7	1.6	2.9
10	0	43.3	41.7	2.1	0.0	0.8	6.8	1.5	3.8
11	0	44.8	39.8	3.8	0.1	0.8	7.5	0.9	2.4
12	0	33.7	49.0	4.6	0.1	2.6	6.8	1.0	2.1
AV	0	30.8	48.6	8.5	0.1	1.5	6.6	1.0	2.8
<u>May - 56 weeks old</u>									
1	0	31.1	45.7	9.4	0.2	4.4	5.9	1.4	2.0
2	0	30.0	43.2	9.4	0.2	3.8	9.1	1.1	3.2
3	0	47.1	33.2	4.6	0.1	3.8	9.0	0.1	2.0
4	0	65.9	17.8	0.6	0.0	0.9	6.3	3.3	5.1
5	0	27.3	46.7	11.8	0.2	4.9	6.5	1.1	1.4
6	0	56.4	29.5	2.0	0.0	1.1	4.1	1.7	5.3
7	0	31.1	44.2	9.9	0.3	1.7	8.4	2.7	1.6
8	0	26.7	43.7	10.4	0.3	5.0	10.0	0.2	3.7
9	0	58.8	26.1	2.2	0.0	0.5	5.7	3.4	3.2
10	0	61.5	24.0	1.0	0.0	0.7	8.0	1.9	2.9
11	0	62.7	24.6	2.2	0.0	0.9	4.5	2.4	2.7
12	0	46.5	32.9	3.8	0.1	3.5	8.4	1.6	3.3
AV	0	45.4	34.3	5.6	0.1	2.6	7.2	1.7	3.0

TABLE 22-4D-V (continued).....

Entry No.	Treatment	Percent Grade A or Better				% Breaker		% Loss Eggs	
		Ex. Large & Jumbo	Large	Medium	Small & Pee Wee	Sound	Crax	Farm	Other
1	0	35.8	41.4	8.6	0.3	2.3	3.4	4.2	4.0
2	0	34.7	38.7	8.5	0.3	1.2	8.5	4.1	4.0
3	0	49.4	27.6	4.1	0.2	1.8	9.1	3.9	3.9
4	0	67.1	13.7	0.8	0.1	0.3	5.0	7.4	5.6
5	0	28.5	44.4	11.3	0.3	1.3	7.1	2.9	4.1
6	0	59.6	26.7	2.9	0.3	0.3	5.5	0.9	3.8
7	0	35.8	41.5	8.1	0.3	0.7	9.4	0.4	3.9
8	0	25.6	42.1	13.0	0.7	1.6	7.9	4.0	5.0
9	0	57.2	26.3	2.6	0.1	0.4	4.5	3.2	5.7
10	0	61.3	22.0	1.5	0.2	0.8	7.8	3.2	3.2
11	0	63.9	23.3	2.6	0.5	0.1	4.5	1.2	4.0
12	0	48.2	29.7	5.0	0.1	1.6	8.5	1.7	5.1
AV	0	47.3	31.4	5.8	0.3	1.0	6.8	3.1	4.4

TABLE 22-F
SOME SPECIFICATIONS OF FEEDS USED

	Feed Designation								
	Start	Grow 1	Grow 2	Lay-TL	Lay-TM	Lay-TN	Lay-T0	Lay TP	Lay TQ
Met. Energy, Kcal/lb	1307	1328	1329	1280	1280	1280	1285	1305	1305
Protein, %	20.7	17.4	14.8	20.5	19.5	18.0	16.5	16.0	15.0
Lysine, %	1.10	0.84	0.64	1.05	.98	.88	.77	.74	.67
Methionine, %	0.38	0.39	0.40	.54	.44	.37	.37	.34	.34
TSAA, %	0.70	0.66	0.55	.84	.73	.64	.61	.58	.56
Avail. Phos., %	0.38	0.37	0.37	.59	.51	.46	.43	.41	.39
Calcium, %	0.62	0.60	0.59	3.55	3.55	3.55	3.60	3.60	3.60
Fat, %	3.13	3.34	3.52	3.43	3.55	3.63	3.69	3.66	3.72
Sodium, %				.35	.22	.20	.19	.18	.18
Relative Cost 7/80				1.15	1.10	1.05	1.02	1.00	0.98

TABLE 22-4D-VI. Duncan Range Test and Range Groups

Range	Entry	Eggs Per Pullet Housed	Duncan Test	Range	Entry	% Production After 50%	Duncan Test	Range	Entry	Feed Per Lb. of Eggs	Duncan Test	Range	Entry	Days Lost to Mortality	Duncan Test
1	8	255.2		1	2	77.8		1	8	2.44		1	5	7.1	
1	5	246.7		1	3	77.7		1	2	2.45		1	10	11.6	
2	2	246.2		1	8	77.5		1	5	2.46		2	8	13.3	
2	10	243.5		1	12	76.6		1	1	2.48		2	4	13.7	
2	3	241.5		2	7	76.3		1	12	2.49		2	9	15.7	
2	6	238.5		2	10	75.3		2	7	2.51		2	2	16.7	
Mean		237.8		2	6	75.2		Mean		2.55		2	1	16.8	
3	12	237.1		Mean		75.2		3	3	2.55		Mean		18.0	
3	7	237.1		3	5	74.2		3	6	2.56		3	6	20.8	
3	9	234.0		3	9	73.9		3	9	2.62		4	11	23.6	
3	1	229.9		3	1	73.7		4	11	2.65		4	12	25.2	
4	11	226.3		4	11	72.3		4	10	2.66		4	7	25.2	
4	4	217.8		4	4	71.8		4	4	2.70		4	3	25.8	