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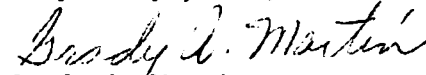
AGRICULTURAL EXTENSION SERVICE
OFFICE OF POULTRY EXTENSION
SCOTT HALL

P. O. Box 5307
RALEIGH, N. C. 27607

I am enclosing the Final Summary of the Seventh 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. Please circulate this among your associates so that they too may study its contents.

The Eighth North Carolina Random Sample Laying Test is now in progress. It compares slat floor vs. litter-slat floor combination housing during the growing period and two-bird cages vs. slat floor vs. litter-slat floor combination housing during the laying period. Requests for reports from this test should be sent to Piedmont Research Station, Route #6, Salisbury, N. C.

Very truly yours,



Grady A. Martin
Extension Poultry Specialist

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FINAL SUMMARY REPORT
SEVENTH NORTH CAROLINA RANDOM SAMPLE EGG LAYING TEST

The North Carolina Random Sample Laying Tests are conducted at the Piedmont Research Station, Route #6, Salisbury, N. C. Dr. G. A. Martin is Project Leader and Mr. S. J. Childs, Jr., is Resident Manager. The laying tests are designed to assist commercial poultrymen of North Carolina in evaluating the productivity of stocks of layers that are available to them in commercial quantity. A committee representing the various poultry interests of the state advises the Steering Committee in establishing policies and practices which best serve this purpose.

This summary report of the 1965-66 Laying Test covers performance from March 12, 1965, through July 24, 1966, when the flock reached 500 days of age. Copies of this report may be obtained by request from Mr. S. J. Childs, Jr., address above.

Chicks for each entry were hatched at the test site from a 360-egg sample, either taken as eggs were gathered at a randomly chosen supply flock or by random procedure from at least 3600 eggs when nest sampling was not feasible. Public employees in Agriculture served as sample takers. One hundred twenty sexed pullets (when available) were wing banded for growing in replicated pens of 60 pullets with 175 sq. ft. of pine shavings-covered concrete floor per pen. Layer housing density was 3.5 sq.ft. per bird. First week mortality, sexing errors, and accidental deaths were not charged against the entry.



All-mash rations were mixed at the test site by the formulae shown later in this report. The Starter ration was fed for 60 days, the Grower ration was fed from the 61st through 151st days, and the Layer ration was fed from the 152nd through the 500th days. The vaccination schedule included intra-ocular Newcastle-bronchitis at one day old, Newcastle booster in water at 20 days old, and Newcastle-bronchitis booster in water at 105 days old; coccidiosis vaccine at 5 days old; fowl pox in the wing web at 90 days old; and encephalomyelitis vaccine in water at 123 days old. All pullets were debeaked to control cannibalism. General management was in accord with good commercial practices in North Carolina.

FORMULAE FOR ALL-MASH RATIONS

	<u>Starter</u>	<u>Grower</u>	<u>Layer</u>
Minimum Crude Protein %	20	16	16
Productive energy Cal./lb.	904	870	913
Metabolizable energy Cal./lb.	1249	1238	1234
Ground Yellow Corn	993.5 lbs.	924.5 lbs.	1166.5* lbs
Stabilized Fat	40	20	40
Wheat Middlings or Shorts	200	300	200
Pulverized Oats	-	300	- *
Fish Meal (60% protein)	100	-	-
Meat and Bone Scraps (50% protein)	-	100	100
Soybean Meal (44% protein) Solvent	450	200	300
Alfalfa Meal (20% protein)	50	50	30
Dried Whey	50	50	25
Distillers Dried Solubles (corn)	50	-	-
Defluorinated Phosphate (Min. 31% Ca. and 15% P.)	30	30	30
Limestone (Min. 33% Ca.)	20	10	90
Iodized Salt	9.5	9.5	9.5
Manganese Sulphate	0.5	0.5	0.5
Zinc Carbonate	0.25	0.25	0.25
Butylated Hydroxytoluene (BHT)	0.25	0.25	0.25
DL Methionine	1	-	0.5
Vitamin Premix	5	5	7.5
Total	2000	2000	2000

*Substitute 150 pounds of pulverized oats for a similar quantity of ground yellow corn during hot weather in June, July, August, and September 15.

VITAMIN PREMIX ANALYSIS PER POUND

Vitamin A (U.S.P.Units)	400,000
Vitamin D ₃ (I.C. Units)	200,000
Vitamin B ₁₂ Activity mg.	1
Vitamin E (I. Units)	200
Riboflavin, mgs.	400
Niacin, mgs.	3,000
Pantothenic Acid, mgs.	552
Choline, mgs.	26,037
Trace Elements, in percent:	
Cobalt	0.004
Copper	0.04
Iodine	0.024
Iron	0.4
Manganese	1.2

INFORMATION CONCERNING DATA REPORTED

Computing service for this project is provided under the terms of the National Institutes of Health Grant No. FR-00011. The average of the performance of the two pens is reported in all data.

TABLE I

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

Breeder is the name used to distinguish entries. Complete stock identification, breeder's address, address of the sample source, percentage of breeder females for this organization in U.S. and Canada which produce this stock, and size of flock sampled are given at the end of this report.

Net Pullets or Hens is the number of pullets at one week, at housing, and at 500 days, with sexing errors, first week mortality, and accidental deaths excluded.

% Mortality is the percentage of net pullets that died during the specified periods. A veterinarian was retained to perform autopsies upon all birds (except as noted) that died after the first week. The cause of death was noted and these findings are summarized in Table III by categories.

Feed Consumed was calculated in such a manner as to make it independent of mortality and to reflect feed consumption per bird for a 150-day growing period and a 350-day laying period.

% Loss (downgrades) is the percentage by which total egg value was reduced below Grade A egg value due to downgrades detected from candling. We express our appreciation to Mr. Carl Tower, of the N. C. Department of Agriculture, and his co-workers for providing candling service on one day of production each month. Market value of all eggs was calculated on the basis of the candling reports.

Chick Price is the 3-year average price per sexed pullet chick in lots of 1,000 as quoted to us through price lists or signed statements from the breeder's representative.

Feed Cost - 1-150 days and 151-500 days was calculated by charging the feed per pullet housed each month at the 3-year average of monthly feed prices reported by the North Carolina Department of Agriculture. Prices are tabulated elsewhere in this report.

Cost of Feed and Chicks charges the net pullets at one week against the survivors at 150 days at the reported chick price. This figure is added to the two feed cost figures for the total.

Value of Eggs was calculated by crediting the weekly egg production at the 3-year weekly average Grade A price for that week and size class as reported by the Federal-State Market News Service at Raleigh. At the close of each quarter, this value was discounted by the percentage reduction below Grade A value due to downgrades (except dirties) from candling of three days of production during the quarter.

Value of Meat was calculated by applying the 3-year average price of that class of fowl during the last week of July to the total weight of marketable survivors for the pen and dividing by the number of pullets housed. Average prices were \$.0067 for entries that averaged between 5 and 7 pounds and \$.0642 for entries averaging less than 5 pounds.

I.O.F.C.C. is Income over Feed and Chick Cost per pullet housed. This does not represent profit since costs of brooding, vaccines, medicants, oyster shells, grit, depreciation on houses and equipment, insurance, interest on investment, power, labor, etc., are not deducted from income. Three-year average prices by months are tabulated later. This figure is applicable only to the cost, price, and environment combination of this test.

Duncan Range Test of I.O.F.C.C. This may have little meaning to those who have not used statistical procedures. Basically, this test indicates that differences greater than those spanned by any one of the vertical lines would not be expected to occur more than 5 times out of 100 comparisons if all stocks had the same ability to produce. Few of us can insure 19 to 1 odds in our favor on daily business transactions. It is, therefore, better to observe the performance of a stock in more than one test or in the same test for more than a single year to ascertain its value relative to other stocks.

TABLE II

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

Egg Size Distribution (%) was obtained by crediting the weekly total egg production to size classes proportional to those observed on the total production of one day. The sums of these weekly totals were converted to percentages at the end of the test. Individual eggs weighing between 23 and 26 ounces per dozen are classified as large. Other size classes are scaled up or down from large in blocks of 3 oz./doz.

Average Egg Weight in ounces per dozen was obtained by mass weighing one day's eggs each week. The average weight for this day was multiplied by the weekly production and the weekly products were accumulated for the test. The total weight of eggs was divided by the number of eggs laid to determine the average weight.

Average Body Wt. was the average of individual weights of all birds in the pens on the 150th and 500th days.

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

Eggs per Pullet Housed is the total number of eggs produced divided by the number of pullets housed. The Duncan test is explained at the end of Table I.

TABLE III

Cause of Mortality as determined by autopsy is reported as percentages of net pullets at one week for the growing period and of net pullets housed for the laying period.

Hen-Days Lost to Mortality per Bird represents the average number of days by which the entry failed to provide 350 hen-days per pullet housed. This has the advantage of counting less loss for birds that die late in the year than for early mortality.

Pounds of Feed Per - Dozen Eggs and Pound of Eggs were calculated by dividing the total feed consumed in the last 350 days by the total dozens and pounds of eggs laid during this time. The Duncan test is explained at the end of Table I.

TABLE IV

Colored Inclusions (Breakout): Blood Spots and Meat Spots were obtained by breaking one day's production from each pen at about 30-day intervals throughout the year. Spots exceeding 1/8 inch were classified as large and those of lesser size as small. Breakout data were not used for egg value calculations.

Candled Quality %. Official 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 the value of eggs.

Albumen Quality in Haugh Units was measured on an equal number of eggs from each pen and approximately one day's production per quarter. Since this factor undergoes seasonal change, the quarterly averages 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 1.060 were given a score of 0, those between 1.060 and 1.072 a score of 1, etc., with those exceeding a specific gravity of 1.100 receiving a value of 9. One day's production from each pen was classified in the months indicated. Since this factor undergoes seasonal change, quarterly and annual average data are given.

TWO YEAR SUMMARY - TABLE V

Selected items have been averaged over two years of testing. The entries are arranged in descending order of eggs per pullet housed. These are averages of stocks as entered by the breeding organization and in some cases are a different breeding combination in each of the years. Nevertheless, these averages should be better indicators of future performance in this test than a single year summary would be. For an excellent presentation of average performance in all tests, the reader is referred to the USDA Agricultural Research Service publication 44-79-6, January, 1966, which presents 2-year average regressed means for each stock.

FEED PRICE - EGG VALUE TABLE

Three-year average monthly feed prices and three-year average egg prices for the weeks beginning in the indicated months of this report are listed below:

Three-Year Average Feed Prices (\$ per ton)			Three-Year Average Egg Price (¢ per doz.)			
Starter	Grower	Layer	A Large	A Medium	A Small	A Pee Wee
Aug.		94.33	38.3	28.9	18.9	13.7
Sept.		93.67	39.9	30.8	21.0	14.1
Oct.		94.00	36.9	29.5	23.2	13.3
Nov.		93.67	38.4	30.2	26.2	13.4
Dec.		93.33	38.2	32.9	28.0	14.1
Jan.		94.00	35.5	31.4	27.8	11.5
Feb.		94.00	34.5	31.1	27.6	12.8
Mar.	90.60	94.67	35.9	31.3	27.2	16.4
Apr.	89.14	94.00	32.8	29.0	23.8	14.9
May	37.60	94.67	28.3	20.3	18.1	12.3
June	37.60	94.67	31.4	24.2	17.8	11.5
July	88.46	95.67	35.4	25.3	18.3	11.7

COMPARATIVE DATA between TESTS

The data below is tabulated to facilitate trend and performance level comparisons over the seven tests which have been completed. Hatch date was one month later and energy level of the feeds was somewhat higher in the 6th and 7th tests.

AVERAGE PERFORMANCE

Test No.	1	2	3	4	5	6	7
I.O.F.C.C.	\$1.54	\$ 1.73	\$1.88	\$1.93	\$0.98	\$1.06	\$1.42
Eggs/Pullet Housed	220	223	233	243	222	236	239
Prod. Rate after 50%	71.2%	72.1%	73.7%	73.6%	73.3%	73.0%	75.0%
Egg Weight (oz./doz.)	25.3	25.7	25.6	25.1	25.0	25.4	25.5
Lbs. feed/doz. eggs	4.47	4.47	4.59	4.65	4.53	4.45	4.31
Lbs. feed/lb. eggs	2.83	2.78	2.84	2.96	2.89	2.81	2.70
% laying mortality-total	12.6%	10.7%	12.4%	5.0%	18.0%	10.2%	10.3%
- Due to leukosis	2.7%	5.9%	7.1%	1.4%	12.8%	6.9%	8.2%

TABLE I, Test 7-4: a. Numbers, Mortality, Feed & Loss; b. Cost and Income per Pullet 24

a. Entry No.	Breeder	Net Pullets or Hens			% Mortality		Feed Consumed		^{No cost of} % Loss (down- grades) <i>to table 3</i>
		at 1 Week	Housed	Sold	8-150 days	151-500 days	1-150 days	151-500 days	
13	Shaver	120	100	94	1.7	6.0	19.3	96.9	3.2
2	Babcock	120	100	96	0.8	4.0	19.2	91.5	3.1
3	Hy-Line	117	100	97	0.9	3.0	19.1	95.7	3.3
5	Kimber	120	100	92	0.8	8.0	18.8	91.1	2.8
9	Hubbard	119	100	94	2.5	6.0	22.0	95.1	2.5
16	Honegger	120	100	95	1.7	5.0	18.6	93.5	2.9
20	Heisdorf-N.	118	100	91	2.5	9.0	18.4	92.3	2.4
11	Garber	117	100	90	1.7	10.0	20.3	90.6	1.9
12	Cashman	99	97	83	2.0	14.5	19.2	95.4	4.2
7	Erath	109	99	86	0.9	13.2	19.6	84.1	2.9
1	Welp's	117	100	82	2.6	18.0	17.8	89.9	3.2
17	Garrison	97	95	89	1.0	6.1	18.5	88.8	2.4
4	Colonial	119	100	91	2.5	9.0	18.5	85.4	2.9
18	Ideal	118	100	89	1.6	11.0	18.8	88.2	2.3
8	Ghostley's	116	100	88	1.8	12.0	19.1	95.9	2.8
15	Davis	119	100	94	0.8	6.0	23.2	102.8	3.0
10	Cornell	119	100	93	0	7.0	18.6	91.4	3.4
6	Pa.-Ind. Fm.Bu.	115	100	78	3.5	22.0	18.1	85.5	1.9
14	Fox	116	100	92	2.6	8.0	19.6	82.4	3.9
19	Arbor Acres	118	100	71	5.1	29.0	17.8	83.3	2.9
Average		116	99.6	89.2	1.8	10.3	19.2	91.5	2.9
b. Entry No.	Chick Price	Feed Cost		Cost of Feed & Chicks	Value of Eggs	Value of Meat	IOFCC	Duncan test of IOFCC	
		1-150 days	151-500 days						
13	.369	.852	4.392	5.620	7.178	.415	1.973		
2	.390	.851	4.239	5.484	7.049	.297	1.863		
3	.500	.845	4.428	5.778	7.239	.275	1.736		
5	.433	.835	4.103	5.375	6.832	.279	1.736		
9	.350	.981	4.383	5.723	6.929	.464	1.669		
16	.407	.830	4.332	5.575	6.901	.291	1.617		
20	.367	.832	4.146	5.354	6.680	.281	1.607		
11	.310	.910	3.978	5.204	6.379	.426	1.601		
12	.433	.850	4.073	5.365	6.519	.391	1.545		
7	.350	.876	3.629	4.858	6.027	.325	1.494		
1	.399	.799	3.653	4.866	6.044	.230	1.408		
17	.355	.825	4.042	5.226	6.342	.274	1.389		
4	.440	.826	3.821	5.098	6.127	.264	1.293		
18	.380	.832	3.835	5.051	6.028	.273	1.250		
8	.367	.850	4.270	5.492	6.400	.329	1.236		
15	.340	1.026	4.775	6.144	6.841	.533	1.230		
10	.420	.822	4.135	5.377	6.126	.353	1.101		
6	.388	.820	3.619	4.841	5.691	.237	1.087		
14	.347	.878	3.684	4.918	5.410	.287	0.779		
19	.317	.803	3.190	4.326	4.882	.205	0.762		
Avg.		.857	4.036	5.284	6.381	.321	1.419		

TABLE II, Test 6-4: a. Maturity and Egg Size; b. Body Weight and Egg Production

a.		Days to	Egg Size Distribution (%)					Avg. Egg
Entry		50%	Pee	Small	Medium	Large	Extra Lg.	Weight
No.	Breeder	Production	Wee				and over	(oz./doz.)
3	Hy-Line	164.0	0.2	3.3	15.4	22.6	58.6	26.6
2	Babcock	160.5	0.9	4.5	18.7	29.6	46.3	25.6
13	Shaver	169.0	0.2	2.0	16.1	27.4	54.2	26.4
5	Kimber	162.0	0.5	4.4	22.6	34.6	37.8	25.2
16	Honegger	170.0	0.3	2.7	21.7	31.3	44.0	25.6
9	Hubbard	162.5	0.1	2.2	13.3	21.5	63.0	27.2
15	Davis	167.0	0.1	2.0	14.4	23.7	59.8	26.9
12	Cashman	169.0	0.4	3.8	23.0	34.7	38.1	25.3
20	Heisdorf-N.	165.5	0.3	2.7	22.6	31.6	42.9	25.7
17	Garrison	181.0	0.3	4.5	30.6	39.1	25.6	24.6
11	Garber	163.5	0.0	5.8	23.2	26.9	43.4	25.5
8	Ghostley's	167.0	0.5	3.8	19.9	30.9	45.0	25.8
4	Colonial	165.0	0.6	6.4	20.9	31.1	32.9	24.8
10	Cornell	176.5	0.5	5.1	26.8	38.4	29.3	24.7
7	Erath	163.5	0.5	6.5	29.2	34.0	29.9	24.6
1	Welp's	171.0	0.3	4.8	24.0	38.3	32.6	24.9
18	Ideal	165.5	0.4	5.5	23.1	30.0	41.1	25.3
6	Pa.-Ind. Fm. Bu.	173.0	0.6	3.3	25.9	34.7	35.5	25.2
14	Fox	180.0	0.4	5.0	24.6	30.5	39.6	25.3
19	Arbor Acres	183.0	0.4	3.4	27.6	32.1	36.5	25.1
Average		168.9	0.4	4.1	22.6	31.2	41.8	25.5

b.	Av. Body Wt.		Hen-Day Production Percentages					Eggs/	Duncan	
Entry	150	500	151-240	241-330	331-420	421-500	472-500	After	Pullet	test of
No.	days	days	days	days	days	days	days	50%	Housed	Eggs/P.H.
3	3.5	4.4	77.3	83.5	76.5	72.8	72.0	79.4	267.9	
2	3.6	4.8	79.4	81.8	74.5	68.8	67.8	77.6	264.9	
13	3.8	5.1	71.7	87.2	80.8	71.0	68.4	80.8	263.9	
5	3.6	4.7	76.7	81.5	75.7	72.9	72.0	78.4	257.7	
16	3.6	4.8	69.0	82.4	75.5	71.3	70.8	77.7	257.4	
9	4.6	5.7	78.3	80.7	70.4	60.1	55.3	74.2	250.5	
15	4.8	6.5	71.8	81.7	72.0	60.8	57.6	74.1	249.2	
12	3.8	5.3	67.6	86.8	82.3	77.4	76.3	81.6	248.6	
20	3.6	4.8	74.4	82.5	71.7	65.8	65.8	75.8	247.3	
17	3.5	4.5	63.1	81.7	73.8	66.1	63.4	75.8	241.1	
11	4.1	5.5	72.0	77.5	75.0	67.0	66.0	74.6	239.8	
8	3.7	5.0	70.3	78.5	72.0	64.9	63.1	73.7	238.1	
4	3.4	4.5	70.7	77.3	70.5	63.3	62.8	72.6	235.9	
10	3.5	5.1	62.4	79.3	72.2	65.2	63.1	74.0	235.1	
7	3.9	5.0	71.5	77.4	75.2	63.3	58.1	73.9	232.2	
1	3.2	4.4	68.2	81.4	74.5	69.7	69.0	76.7	229.2	
18	3.6	4.8	64.3	77.8	72.6	65.1	63.7	72.0	226.7	
6	3.4	4.7	63.2	75.8	68.3	61.0	62.2	70.3	212.2	
14	3.8	4.9	55.9	73.6	62.8	56.7	54.6	66.3	207.3	
19	3.3	4.5	56.5	75.3	67.1	60.2	58.0	69.6	183.7	
Avg.	3.7	4.9	69.2	80.2	73.2	66.2	64.5	75.0	239.4	

TABLE III, Test 7-4: a.Cause of Mortality; b.Cause, Days Lost and Feed Conversion

a Entry No.	Breeder	Leukosis		Anemia	Peritonitis		Hemorrhage		Reproductive
		8-150 days	151-500 days	8-150 days	8-150 days	151-500 days	8-150 days	151-500 days	151-500 days
3	Hy-Line	-	2.0	-	-	-	-	-	1.0
2	Babcock	-	3.0	0.8	-	-	-	1.0	-
5	Kimber	0.8	7.0	-	-	-	-	-	-
13	Shaver	-	6.0	-	-	-	-	-	-
7	Erath	0.9	11.2	-	-	-	-	-	2.0
1	Welp's	1.6	15.0	-	-	-	-	2.0	-
9	Hubbard	-	4.0	-	-	1.0	-	1.0	-
12	Cashman	-	11.4	-	-	1.0	-	1.0	1.0
11	Garber	0.8	10.0	-	-	-	-	-	-
20	Heisdorf-N	-	8.0	2.0	-	-	-	-	-
4	Colonial	0.8	7.0	0.8	-	1.0	-	-	-
16	Honegger	0.8	3.0	-	0.8	-	-	-	1.0
18	Ideal	-	9.0	-	-	1.0	0.8	-	1.0
6	Pa-Ind Fm.Bu.	0.8	17.0	-	-	1.0	-	-	2.0
17	Garrison	1.0	3.1	-	-	-	-	-	1.0
19	Arbor Acres	2.5	26.0	-	-	1.0	0.8	1.0	1.0
8	Ghostley	-	8.0	0.8	-	-	-	3.0	1.0
14	Fox	-	6.0	0.8	-	1.0	-	-	1.0
10	Cornell	-	5.0	-	-	-	-	-	1.0
15	Davis	-	3.0	-	-	2.0	-	-	1.0
Average		0.5	8.2	0.3	0.0	0.4	0.1	0.4	0.7

b. Cause Entry No.	Miscellaneous		No Autopsy		Hen-Days lost to	Lbs. of Feed per		Duncan
	8-150 days	151-500 days	8-150 days	151-500 days	Mort/Bird	Doz. Eggs	. Lb. of Eggs	test of Feed/lb.
3	0.8	-	-	-	5.9	4.22	2.54	
2	-	-	-	-	5.7	4.11	2.56	
5	-	-	-	1.0	15.1	4.06	2.58	
13	1.6	-	-	-	11.6	4.27	2.59	
7	-	-	-	-	29.2	3.99	2.60	
1	-	1.0	0.9	-	38.8	4.07	2.61	
9	2.5	-	-	-	7.2	4.48	2.63	
12	2.0	-	-	-	32.7	4.18	2.64	
11	0.8	-	-	-	23.6	4.25	2.66	
20	0.8	-	-	1.0	16.1	4.28	2.66	
4	-	1.0	0.8	-	17.3	4.14	2.67	
16	-	1.0	-	-	5.7	4.30	2.68	
18	-	-	-	-	26.7	4.32	2.73	
6	2.6	2.0	-	-	35.4	4.35	2.77	
17	-	2.0	-	-	11.5	4.28	2.78	
19	1.7	-	-	-	64.8	4.43	2.82	
8	0.9	-	-	-	19.2	4.58	2.84	
14	1.7	-	-	-	17.8	4.54	2.86	
10	-	-	-	1.0	19.3	4.49	2.90	
15	0.8	-	-	-	4.7	4.90	2.91	
Avg.		0.8	0.4	0.1	0.2	20.4	4.31	2.70

TABLE IV, Test 7-4: a. Spots and Canded Quality; B. Albumen and Shell Quality

Entry No.	Breeder	Colored Inclusions (Breakout)				Canded Quality, %				
		Blood Spots %		Meat Spots %		A & Over	B	C	Crax & Chx.	Loss
		Large	Small	Large	Small					
1	Welp's	2.9	2.8	0.1	0.1	90.2	6.4	0.6	2.4	0.3
2	Babcock	1.7	2.7	0	0.1	91.0	6.0	0.3	1.8	0.8
3	Hy-Line	1.4	1.4	0.2	0.2	91.6	4.4	0.1	3.2	0.7
4	Colonial	3.1	2.4	0.3	0.1	90.8	6.6	0.2	1.8	0.5
5	Kimber	1.1	2.4	0	0.1	91.8	5.4	0.4	2.1	0.4
6	Pa-Ind.Fm.Bu.	2.7	1.9	0.1	0.4	95.2	2.8	0.2	1.1	0.6
7	Erath	3.0	3.6	0.2	0	93.1	3.9	0.1	2.0	0.9
8	Ghostley	1.6	3.9	0	0.1	92.2	5.4	0.1	1.2	1.0
9	Hubbard	0.9	1.1	8.3	29.9	93.3	3.7	1.0	1.5	0.4
10	Cornell	1.7	4.2	0	0.3	92.0	4.4	0.1	2.0	1.4
11	Garber	0.8	1.5	0.5	0.2	94.0	3.8	0.1	1.9	0.1
12	Cashman	3.5	3.9	0.2	0.2	88.0	7.8	0.2	2.6	1.3
13	Shaver	2.2	1.8	0.1	0.2	92.6	4.6	0.1	1.6	1.0
14	Fox	1.1	1.1	7.1	30.2	87.2	9.4	1.2	1.6	0.6
15	Davis	0.5	1.7	6.6	19.8	90.6	6.5	0.2	1.9	0.8
16	Honegger	2.2	2.3	0	0.1	92.2	4.9	0.4	1.4	1.0
17	Garrison	1.5	1.1	0	0	92.8	4.9	0	2.2	0.2
18	Ideal	2.0	1.8	0	0.1	93.9	4.0	0	1.4	0.6
19	Arbor Acres	2.7	2.5	0	0.4	92.8	4.6	0.2	1.1	1.2
20	Heisdorf-N.	2.3	2.5	0.1	0	93.2	4.4	0.3	1.4	0.7
Average		1.9	2.3	1.2	4.1	91.9	5.2	0.3	1.8	0.7

Entry No.	Albumen Quality in Haugh Units					Shell Score (Specific Gravity)				
	Sept.	Dec.	Apr.	June	Average	Oct.	Jan.	Apr.	July	Average
1	80.0	77.4	77.3	72.0	76.6	3.68	3.18	2.44	0.78	2.52
2	78.4	78.4	77.7	68.6	75.8	4.44	3.22	2.59	1.28	2.88
3	78.3	77.0	75.4	72.9	75.9	4.26	3.63	2.46	1.42	2.94
4	82.5	81.8	78.4	68.5	77.8	4.37	3.60	2.56	1.18	2.92
5	85.6	81.6	81.8	69.8	79.2	4.84	4.19	3.00	1.41	3.36
6	85.0	87.3	82.3	69.2	81.0	4.08	3.37	2.49	1.26	2.80
7	79.2	76.5	74.5	68.6	74.7	4.30	2.88	2.32	0.80	2.58
8	83.4	81.8	81.2	68.5	78.7	4.05	3.25	2.40	0.87	2.64
9	82.4	81.0	77.4	74.3	78.8	3.34	2.24	1.77	0.59	1.98
10	83.2	81.0	79.4	66.3	77.4	4.20	3.36	2.45	1.56	2.89
11	80.4	77.6	77.8	71.2	76.8	4.33	3.31	2.40	1.05	2.77
12	80.4	80.8	78.4	68.4	77.0	3.84	3.10	2.51	1.06	2.62
13	80.0	78.6	77.8	67.8	76.0	4.54	3.34	2.54	1.46	2.97
14	81.6	76.6	77.2	69.3	76.2	3.25	2.34	1.08	0.48	1.79
15	79.9	80.7	76.0	65.3	75.4	2.67	1.80	1.58	0.46	1.62
16	80.1	80.4	78.2	63.7	75.6	4.53	4.04	2.98	1.84	3.34
17	82.3	80.8	80.6	70.8	78.6	4.30	2.96	2.54	1.56	2.84
18	77.9	76.0	75.4	73.4	75.6	4.24	3.40	2.46	1.34	2.86
19	82.7	82.9	83.1	65.2	78.4	4.08	3.12	2.80	1.40	2.85
20	79.2	84.2	83.0	68.6	78.8	4.26	3.04	2.50	1.12	2.73
Avg.	81.1	80.1	78.6	69.1	77.2	4.08	3.16	2.39	1.14	2.69

TABLE V. Tests 6 and 7: Two-Years Summary

Line No.	Breeder	Stock Designation		Lbs. Body Wt.		% Prod. after		Eggs/ Pullet Housed
		1964-65	1965-66	150 days	500 days	50%	IOFCC	
1	Babcock	B-300	same	3.0	5.0	78.0	1.827	269.4
2	Shaver	#200	same	3.0	5.1	80.2	1.770	264.4
3	Kimber	K-137	K-137A	3.6	4.7	76.6	1.550	256.0
4	Hy-Line	934-D	same	3.4	4.3	75.9	1.330	250.0
5	Hubbard	Comet	Gold.Com.	4.6	5.6	74.0	1.531	249.2
6	Honegger	H-80	Layers	4.0	5.2	75.1	1.300	247.0
7	Reisdorf-II.	Hick Chick	same	3.6	4.8	72.0	1.250	241.5
8	Davis	Combiner	same	5.0	6.6	72.6	1.001	239.0
9	Garrison	K-300	same	3.5	4.4	74.0	1.112	235.1
10	Ideal	H3W-2	236	3.6	4.7	71.7	1.090	220.0
11	Ghostley's	Pearl 63	same	3.7	5.0	70.4	.824	225.0
12	Pa.-Ind. Pm.Bu.	#55	same	3.5	4.0	71.0	.954	216.0
13	Cashman	Hi-Cash	same	3.7	5.0	70.0	.905	214.6
14	Fox	L.Red Hens	same	3.9	4.9	66.4	.704	213.2
15	Arbor Acres	Queen	same	3.4	4.6	72.4	.862	202.0
Average				3.0	5.0	73.9	1.224	236.0

Line No.	Age at 50% Prod.	% Mortality		Days Lost/ Layer	Av. Egg Weight (oz./doz.)	Lbs. Feed per Eggs		% Loss (down-grades)	Albumen Score (H. U.)	Shell Score (S.R.)
		0-150 days	151-500 days			doz.	Lbs.			
1	157.5	0.4	2.5	4.4	25.6	4.10	2.60	2.0	75.2	2.96
2	162.2	0.0	7.0	14.0	25.9	4.26	2.63	3.4	74.0	3.06
3	162.2	0.4	5.5	10.0	25.3	4.14	2.62	2.0	79.0	3.57
4	164.0	1.7	7.0	14.2	26.0	4.31	2.65	2.4	74.6	3.01
5	162.2	2.4	6.4	30.4	26.2	4.44	2.70	2.2	70.1	2.21
6	164.0	2.6	7.0	19.2	25.3	4.24	2.72	2.4	74.0	3.05
7	163.5	1.6	7.0	11.7	25.4	4.40	2.70	2.4	79.2	2.30
8	166.0	1.2	0.0	11.1	26.0	4.96	2.94	2.6	75.5	1.73
9	170.0	1.0	0.6	13.2	24.0	4.30	2.62	2.6	70.3	2.02
10	164.5	2.6	11.5	30.4	25.4	4.44	2.79	2.5	75.6	3.17
11	166.0	2.2	14.0	22.9	25.5	4.70	3.00	2.0	75.6	2.70
12	169.5	3.9	10.5	34.0	25.0	4.34	2.70	2.4	60.3	2.97
13	173.5	2.0	24.0	60.0	25.2	4.27	2.70	3.6	75.0	2.72
14	176.5	2.2	7.5	13.0	25.4	4.55	2.06	3.9	75.6	1.92
15	179.0	3.4	25.0	51.2	25.2	4.40	2.79	3.0	70.5	2.94
Av.	167.5	1.9	10.7	22.0	25.5	4.41	2.76	2.0	77.0	2.70

LIST OF ENTRANTS, STOCKS, SAMPLE SOURCE, % MATED (this stock), & SIZE OF FLOCK
SAMPLED

<u>BREEDER and LOCATION</u>	<u>STOCK DESIGNATION</u>	<u>SOURCE OF SAMPLE</u>	<u>% MATED and NO. IN FLOCK</u>
Arbor Acres Farm, Inc. Glastonbury, Conn.	WL StrX Queen	Arbor Acres South- east, Inc., Asheville	95% 4,500 N
Babcock Poultry Farms, Inc., Ithaca, N. Y.	WL 3wX B-300	Harrolds Hatchery Winterville, Ga.	70% 10,000 H
Cashman Leghorn Farms Webster, Ky.	WL 3INX Hi-Cash	Cashman Leghorn Farm Webster, Ky.	80% 4,000 N
Colonial Poultry Farm, Inc. Pleasant Hill, Mo.	WL 4INX, True- Line 365-B	Colonial Hatcheries, Inc., Cullman, Ala.	30% 2,445 N
Joe K. Davis Hatchery Earl, N. C.	BK RIRxBPR Combiner Sex L.	Joe K. Davis Hatchery Earl, N. C.	65% 6,000
Erath Egg Farm Stephanville, Tex.	3IBK CGxWLX Mestiza	Erath Egg Farm Stephanville, Tex.	25% 11,000 N
Fox-Den Farm Cary, N. C.	RIR StrX Little Red Hens	Fox-Den Farms Cary, N. C.	90% 2,000 H
Garber Poultry Breeding Farm, Modesto, Calif.	BK CGxWL GX 291	Joe K. Davis Hatchery Earl, N. C.	40% 2,300
Earl W. Garrison, Inc. Bridgeton, N. J.	WL StrX X300	Stever Poultry Farm Huntingdon, Pa.	10% 3,000 N
Ghostley's Poultry Farms, Inc., Anoka, Minn.	WL StrX Pearl 63	Chick Haven Farm N. Wilkesboro, N. C.	95% 12,903 N
Heisdorf & Nelson Farms, Inc., Kirkland, Wash.	WL StrX Mick Chick	J. C. Castlebury Poultry Farm, Apex, N. C.	95% 15,000
Honegger Farms Co., Inc. Forrest, Ill.	WL 3WX Layers	Fred Haley Hatchery, Inc. Canton, Ga.	80% 9,000 H
Hubbard Farms, Inc. Walpole, N. H.	BK INXSyn. Golden Comet	*Hubbard Farms, Inc. Statesville, N. C.	10% 2,000
Hy-Line Poultry Farms Des Moines, Iowa	4IBK Syn.XSyn. 934-D	Tar Heel Chicks, Inc. Monroe, N. C.	90% 13,000
Ideal Poul. Breeding Farms, Inc., Cameron, Texas	4BK Syn.xWL #236	Jordon Bros. Hatchery Inc., Bridgewater, Va.	50% 4,900
Kimber Farms, Inc. Fremont, Calif.	WL StrX K-137-A	**Hubbard Farms, Inc. Statesville, N. C.	20% 1,236
N. Central Regional Poul. Br. Lab., Lafayette, Ind.	WL RE Cornell Cont.	N. Central Regional Poul. Br. Lab., Lafayette, Ind.	Unknown
Pa.-Ind. Farm Bureau Grantville, Pa.	WL StrX Princess 55	Pa. Farm Bureau Harrisburg, Pa.	30% 8,900
Shaver Poul.Br.Farms,Ltd. Galt, Ontario,CANADA	WL 3WX Starcross 288	Mid-Valley Hatchery, Inc. Dayton, Va.	90% 12,000
Welp's Breeding Farm Bancroft, Iowa	WL StrX #937	Coven Hatchery Moschton, Ga.	80% 3,200

*Prod. by Haven Little in N. Hampshire; **Prod. by Henry Berg in Pa.; N=Nest Sample