

**HATCH AND SEROLOGY REPORT OF THE THIRTY FIFTH
NORTH CAROLINA LAYER PERFORMANCE AND MANAGEMENT TEST**

Vol. 35, No. 1
February 2003

The North Carolina Layer Performance and Management Test is conducted under the auspices of the Cooperative Extension Service at North Carolina State University and the North Carolina Department of Agriculture. The flock is maintained at the Piedmont Research Station, Salisbury, North Carolina. Mr. Raymond Coltrain is Piedmont Research Station Superintendent; Mr. David Joyce was Resident Manager of the flock; Mrs. Pamela Jenkins is coordinator of data compilation and statistical analysis; and Dr. K. E. Anderson is Project Leader. The purpose of this program is to assist poultrymen in evaluation of commercial layer stocks and management systems.

For further information contact:



Dr. Kenneth E. Anderson
Professor
Poultry Science Department
North Carolina State University
Box 7608
Raleigh, NC 27695-7608
Tel: (919) 515-5527
Fax: (919) 515-7070
Email: ken_anderson@ncsu.edu

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Entries:

Ten entries were accepted or acquired in accordance with the rules and regulations of the test. Seven white egg strains and three brown egg strains are participating in the current test.

35th North Carolina Layer Performance and Management Test
Strain Code Assignments

Strain No.	Strain Code	Source of Stock	Strain
1	A	Hy-Line International	Brown
2	B	Centurian Poultry Inc.	Bovans Brown
3	C	Centurian Poultry Inc.	Bovans Goldline
4	D	Centurian Poultry Inc.	Dekalb White
5	E	Hy-Line International	W-36
6	F	Hy-Line International	W-98
7	G	Hy-Line International	CV-20
8	H	Centurian Poultry Inc.	Bovans White Exp
9	I	Centurian Poultry Inc.	Bovans White
10	J	Lohmann Tierzucht Inc., N.A.	LSL-Lite

Dates of Importance:

The eggs were set on December 18, 2002 and hatched on January 8, 2003. The chicks were all sexed according to their genetics (feather, color or vent), vaccinated for Marek's disease, and wing banded for identification before transfer to the brood/grow houses.

Data Collection:

The analysis of fertility and embryonic mortality was conducted on the eggs remaining in the hatch tray and on eggs removed at time of transfer. Tables 1 and 2 indicate the percentage of total eggs set. Table 1 shows the percent usable chicks, cull chicks, and residue of total eggs set. Table 2 shows the distribution of the residue by each embryonic category.

The serology report was obtained by collecting a blood sample from male chicks obtained from each strain at hatch. Serum samples were collected and packaged and refrigerated until delivery to the NCDA & CS Rollins Diagnostic Laboratory. The attached laboratory report gives the viral serology for the samples provided from each strain.

At housing the chick weight was recorded for each replicate. The chick weight

information will be reported in the grow report.

Hatch and Serology Report of the Thirty Fifth North Carolina Layer Performance and Management Test

Hatch Comments:

The eggs arrived at the Research Station in good condition. All of the strains were shipped ground freight. There were few broken eggs and the number of dirty eggs was minimal among all the eggs from the represented strains. The eggs were set and allowed to come to room temperature prior to placement in the incubation. At time of transfer, the eggs were transferred to the hatching tray and place in the hatchers.

Serology Comments:

We were able to get adequate serum from each of the 10 strains. The chicks were MG negative and the IBD antibody levels were indicative of a good vaccination program in the breeder flocks of all strains. The IBD titers were present in all the strains and the titer levels for the individual samples appeared to have a normal distribution, indicating a good breeder vaccination program.

Source of Stock	Strain	MG Elisa	IBD (AGID)
Hy-Line International	Brown	Neg	Neg
Centurian Poultry Inc.	Bovans Brown	Neg	Neg
Centurian Poultry Inc.	Bovans Goldline	Neg	Neg
Centurian Poultry Inc.	Dekalb White	Neg	Neg
Hy-Line International	W-36	Neg	Neg
Hy-Line International	W-98	Neg	Neg
Hy-Line International	CV-20	Neg	Neg
Centurian Poultry Inc.	Bovans White Exp	Neg	Neg
Centurian Poultry Inc.	Bovans White	Neg	Neg
Lohmann Tierzucht Inc., N.A.	LSL-Lite	Neg	Neg

Table 1. Analysis of hatch by percent usable chicks and eggs in residue from total eggs set

Strain	Chicks Pulled	Female Chicks¹	Male Chicks	Cull Chicks	Total Egg Residue
		-----%-----			
Hy-Line Brown	78.04	46.99	41.37	0.00	21.96
Bovans Brown	54.92	46.92	29.15	0.83	44.25
Bovans Goldline	62.59	46.56	33.45	0.19	37.22
Dekalb White	82.62	46.61	44.11	0.74	16.64
Hy-Line W-36	89.96	47.57	47.17	0.10	9.94
Hy-Line W-98	80.18	53.03	37.66	0.46	19.36
Hy-Line CV-20	76.13	49.95	38.11	0.28	23.59
Bovans White Exp	72.49	52.17	34.67	0.93	26.58
Bovans White	69.62	52.28	33.22	0.65	29.73
LSL-Lite	80.60	47.09	42.65	0.46	18.93

¹Calculated as a percentage of usable chicks.

Table 2. Analysis of breakout on eggs set to determine cause of embryo mortality as percent of residue

Strain	Infertile	Ed Mem	Ed Blood	Mid Dead	Pre Air Cell	Post Air Cell	Pip Live	Pip Dead	Contam¹.	Abnormal Shells²	Abnormal Embryo	Upside Down³	Crack
----- % -----													
Hy-Line Brown	39.89	12.36	10.67	5.62	16.85	6.18	2.81	5.06	0.56	0.00	0.00	0.00	0.00
Bovans Brown	24.32	7.21	2.70	7.88	15.32	13.96	18.47	9.68	0.23	0.00	0.23	0.00	0.00
Bovans Goldline	27.69	6.92	4.62	9.49	30.26	11.79	2.05	4.87	0.51	0.00	0.26	0.51	1.03
Dekalb White	15.63	8.33	5.73	10.42	28.65	7.29	13.02	10.42	0.52	0.00	0.00	0.00	0.00
Hy-Line W-36	33.33	6.86	5.88	8.82	32.35	3.92	1.96	4.90	0.98	0.00	0.00	0.98	0.00
Hy-Line W-98	27.34	6.25	1.56	8.59	28.13	14.06	2.34	5.47	1.56	0.78	0.78	2.34	0.78
Hy-Line CV-20	14.61	5.02	6.39	12.79	38.81	10.50	3.20	4.57	1.37	0.46	0.00	0.46	1.83
Bovans White Exp	51.38	6.32	1.58	4.74	18.97	6.72	3.56	5.53	0.79	0.00	0.00	0.40	0.00
Bovans White	48.16	4.08	2.04	11.84	23.27	6.12	1.63	2.86	0.00	0.00	0.00	0.00	0.00
LSL-Lite	37.93	16.09	8.62	5.75	13.79	2.87	9.20	4.60	0.00	0.00	0.57	0.00	0.57

¹Contaminated eggs.

²Abnormal shell structure.

³Eggs set with the small end up.