



# North Carolina Cooperative Extension Service

NORTH CAROLINA STATE UNIVERSITY  
COLLEGE OF AGRICULTURE & LIFE SCIENCES

Extension Poultry Science • Scott Hall, Box 7608 • Raleigh, NC 27695-7608 • Tel: (919) 515-2621 FAX: (919) 515-7070

## 30th NORTH CAROLINA LAYER PERFORMANCE AND MANAGEMENT TEST

### HATCH AND SEROLOGY SUMMARY

Vol. 30, No. 1  
June 1992

#### Entries:

Twelve entries were accepted or acquired in accordance with the rules and regulations of the test. Eight white egg strains and four brown egg strains are participating.

#### Dates of Importance:

The eggs were set on January 27, 1992 and hatched on February 19, 1992. The chicks were all vent sexed and vaccinated for Marek's then transferred to the brood/grow houses.

#### Data Collection:

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

The serology report was obtained by collecting a blood sample from male chicks obtained from each strain. Samples were spun down and packaged for shipment to an independent lab. The following table gives the strain identification for the data contained in this report.

Kenneth E. Anderson  
Extension Poultry Specialist

**Piedmont Research Station  
29th North Carolina Layer Performance and Management Test  
January, 1990**

| Strain<br>Letter | Computer<br>Code | Strain<br>Name     |
|------------------|------------------|--------------------|
| A                | 1                | Shaver White       |
| B                | 2                | Hisex White        |
| C                | 3                | ISA B300-A         |
| D                | 4                | ISA B300-B         |
| E                | 5                | Hyline W-36        |
| F                | 6                | H & N "Nick Chick" |
| G                | 7                | Dekalb Delta       |
| H                | 8                | Dekalb XL          |
| I                | 9                | Hisex Brown        |
| J                | 10               | ISA Brown          |
| K                | 11               | Hyline Brown       |
| L                | 12               | H & N Brown "Nick" |

**Hatch Comments:**

The eggs arrived at the Research Station in good condition. There were few broken eggs and the number of dirties were greatly reduced over the previous test. The eggs from a number of strains were small resulting in small chicks at the time of hatch. The use of young breeder flocks may have affected particular strains resulting in reduced fertility and hatchability as shown in both Tables 1 and 2.

**Serology Comments:**

Dr. David V. Rives  
Extension Veterinarian

We were unable to get adequate serum from Strain 6. IBD titers were adequate in the other strains. Strains 1, 5, 8, 10, and 12 showed minimal variation among birds tested, indicating a very good breeder vaccination program.

Strains 3 and 9 each had one sample suspicious for MG. On further examination, these were determined to be negative.

ProfLOK (R)  
KIRKEGAARD AND PERRY LABORATORIES

Flock Profile Report: 1 (DPlate 032292A)

03/23/92

N.C. STATE UNIVERSITY  
DR. DAVID V. RIVES  
EXTENSION POULTRY SCIENCE  
SCOTT HALL, BOX 7808  
RALEIGH, NC 27895

CURRENT AGE 4-0 BREED PRODUCER

Sample IBD  
Date Bled 02/25/92  
Flock Age 0-1  
Accession 28  
7081  
7319  
3385  
5773  
5745  
5637  
8570

Mean : 8213  
CV : 26.8  
Min : 3385  
Max : 8570  
Count: 7

Flock Profile Report: 2 (DPlate 032292A)

03/23/92

N.C. STATE UNIVERSITY  
DR. DAVID V. RIVES  
EXTENSION POULTRY SCIENCE  
SCOTT HALL, BOX 7808  
RALEIGH, NC 27895

CURRENT AGE 4-0 BREED PRODUCER

Sample IBD  
Date Bled 02/25/92  
Flock Age 0-1  
Accession 28  
7390  
13271  
12675  
1584  
2055  
1588  
1375  
1587

Mean : 8041  
CV : 42.24  
Min : 1584  
Max : 13271  
Count: 8

Flock Profile Report: 3 (DPlate 032292A)

03/23/92

N.C. STATE UNIVERSITY  
DR. DAVID V. RIVES  
EXTENSION POULTRY SCIENCE  
SCOTT HALL, BOX 7808  
RALEIGH, NC 27895

CURRENT AGE 4-0 BREED PRODUCER

Sample IBD  
Date Bled 02/25/92  
Flock Age 0-1  
Accession 28  
11002  
9887  
7984  
7898  
10157

Mean : 7788  
CV : 20.22  
Min : 51.4  
Max : 11002  
Count: 5

ProFLOK (R)  
KIRKEGAARD AND PERRY LABORATORIES

Flock Profile Report: 4 (DPlate 032292A)

03/23/92

N.C. STATE UNIVERSITY  
DR. DAVID V. RIVES  
EXTENSION POULTRY SCIENCE  
SCOTT HALL, BOX 7608  
RALEIGH, NC 27895

CURRENT AGE 4-0 BREED PRODUCER

Sample IBD  
Date Bled 02/25/92  
Flock Age 0-1  
Accession 28  
#1 10305  
#2 8885  
#3 8887  
#4 4401  
#5 4597  
#6 4545  
#7 6240  
#8 5367  
#9 3088

Mean : 6178  
CV : 5718  
Min : 42.1  
Max : 3088  
Count: 10305

Flock Profile Report: 5 (DPlate 032292A)

03/23/92

N.C. STATE UNIVERSITY  
DR. DAVID V. RIVES  
EXTENSION POULTRY SCIENCE  
SCOTT HALL, BOX 7608  
RALEIGH, NC 27895

CURRENT AGE 4-0 BREED PRODUCER

Sample IBD  
Date Bled 02/25/92  
Flock Age 0-1  
Accession 28  
#1 9819  
#2 7347  
#3 10720  
#4 5529  
#5 6380  
#6 6305

Mean : 7680  
CV : 7453  
Min : 27.4  
Max : 5529  
Count: 10720

Flock Profile Report: 7 (DPlate 032292A)

03/23/92

N.C. STATE UNIVERSITY  
DR. DAVID V. RIVES  
EXTENSION POULTRY SCIENCE  
SCOTT HALL, BOX 7608  
RALEIGH, NC 27895

CURRENT AGE 4-0 BREED PRODUCER

Sample IBD  
Date Bled 02/25/92  
Flock Age 0-1  
Accession 28

#1 4448  
#2 4795  
#3 4193  
#4 5718  
#5 2845  
#6 4987  
#7 9279  
#8 6886  
#9 8871

Mean : 5179  
CV : 3292  
Min : 52.4  
Max : 9279  
Count: 10

ProFLOK (R)  
KIRKEGAARD AND PERRY LABORATORIES

Flock Profile Report: 8 (DPlate 032292A)

03/23/92

N.C. STATE UNIVERSITY  
DR. DAVID V. RIVES  
EXTENSION POULTRY SCIENCE  
SCOTT HALL, BOX 7608  
RALEIGH, NC 27895

CURRENT AGE 4-0 BREED PRODUCER

|           |          |
|-----------|----------|
| Sample    | IBD      |
| Date Bled | 02/25/92 |
| Flock Age | 0-1      |
| Accession | 28       |
| 1         | 5850     |
| 2         | 5949     |
| 3         | 4185     |
| 4         | 5434     |
| 5         | 4232     |
| 6         | 3418     |
| 7         | 3091     |
| 8         | 3340     |
| 9         | 8318     |
| 10        | 7011     |
| Mean :    | 4851     |
| GHT :     | 4873     |
| CV :      | 28.3     |
| Min :     | 3091     |
| Max :     | 7011     |
| Count:    | 10       |

Flock Profile Report: 9 (DPlate 032292A)

03/23/92

N.C. STATE UNIVERSITY  
DR. DAVID V. RIVES  
EXTENSION POULTRY SCIENCE  
SCOTT HALL, BOX 7608

CURRENT AGE 4-0 BREED PRODUCER

|           |          |
|-----------|----------|
| Sample    | IBD      |
| Date Bled | 02/25/92 |
| Flock Age | 0-1      |
| Accession | 28       |
| 1         | 2833     |
| 2         | 3327     |
| 3         | 4783     |
| 4         | 2232     |
| 5         | 1935     |
| 6         | 2859     |
| 7         | 2959     |
| 8         | 7771     |
| 9         | 3178     |
| 10        | 3315     |
| 11        | 1885     |
| 12        | 3855     |
| 13        | 1408     |
| 14        | 5247     |
| Mean :    | 3265     |
| GHT :     | 2863     |
| CV :      | 55.8     |
| Min :     | 1255     |
| Max :     | 7771     |
| Count:    | 13       |

Flock Profile Report: 10 (DPlate 032292A)

03/23/92

N.C. STATE UNIVERSITY  
DR. DAVID V. RIVES  
EXTENSION POULTRY SCIENCE  
SCOTT HALL, BOX 7608

CURRENT AGE 4-0 BREED PRODUCER

|           |          |
|-----------|----------|
| Sample    | IBD      |
| Date Bled | 02/25/92 |
| Flock Age | 0-1      |
| Accession | 28       |
| 1         | 10394    |
| 2         | 8828     |
| 3         | 9288     |
| 4         | 9814     |
| Mean :    | 9488     |
| GHT :     | 9439     |
| CV :      | 7.8      |
| Min :     | 8828     |
| Max :     | 10394    |
| Count:    | 4        |

ProfLOK (R)  
 KIRKEGAARD AND PERRY LABORATORIES

Flock Profile Report: 11

(DPlate 032292A)

03/23/92

 N.C. STATE UNIVERSITY  
 DR. DAVID V. RIVES  
 EXTENSION POULTRY SCIENCE
CURRENT AGE  
4-0

BREED

PRODUCER

SCOTT HALL, BOX 7808

| Sample    | IBD      |
|-----------|----------|
| Date Bled | 02/25/92 |
| Flock Age | 0-1      |
| Accession | 28       |
| 1         | 4000     |
| 2         | 6891     |
| 3         | 2602     |
| 4         | 8041     |
| 5         | 3128     |
| 6         | 3385     |
| 7         | 4788     |

|        |      |
|--------|------|
| Mean : | 4656 |
| GMT :  | 4321 |
| CV :   | 43.2 |
| Min :  | 2602 |
| Max :  | 8041 |
| Count: | 7    |

Flock Profile Report: 12

(DPlate 032292A)

03/23/92

 N.C. STATE UNIVERSITY  
 DR. DAVID V. RIVES  
 EXTENSION POULTRY SCIENCE  
 SCOTT HALL, BOX 7808  
 RALEIGH, NC 27695
CURRENT AGE  
4-0

BREED

PRODUCER

| Sample    | IBD      |
|-----------|----------|
| Date Bled | 02/25/92 |
| Flock Age | 0-1      |
| Accession | 28       |
| 1         | 4597     |
| 2         | 4375     |
| 3         | 3390     |
| 4         | 3428     |
| 5         | 2374     |
| 6         | 5598     |
| 7         | 4077     |
| 8         | 8415     |
| 9         | 3403     |

|        |      |
|--------|------|
| Mean : | 4184 |
| GMT :  | 4024 |
| CV :   | 29.8 |
| Min :  | 2374 |
| Max :  | 8415 |
| Count: | 9    |

Flock Mycoplasma Summary Report

03/23/92

| Flock ID | Bleed Age | MG Samp | Neg | Prob Pos | +/- | Conf(%) |
|----------|-----------|---------|-----|----------|-----|---------|
| 1        | 0-1       | 7       | 7   | 0        | 0   | - 21    |
| 10       | 0-1       | 4       | 4   | 0        | 0   | - 12    |
| 11       | 0-1       | 7       | 7   | 0        | 0   | - 21    |
| 12       | 0-1       | 9       | 9   | 0        | 0   | - 27    |
| 2        | 0-1       | 8       | 8   | 0        | 0   | - 24    |
| 3        | 0-1       | 6       | 5   | 1        | 0   | - 16    |
| 4        | 0-1       | 8       | 8   | 0        | 0   | - 24    |
| 5        | 0-1       | 6       | 6   | 0        | 0   | - 18    |
| 7        | 0-1       | 10      | 10  | 0        | 0   | - 30    |
| 8        | 0-1       | 10      | 10  | 0        | 0   | - 30    |
| 9        | 0-1       | 13      | 12  | 1        | 0   | - 37    |

**Table 1. Analysis of Hatch by Percent Usable Chicks, Cull Chicks, and Eggs in Residue From Total Eggs Set**

| Strain         | Usable Chicks | Cull Chicks | Eggs in Residue |
|----------------|---------------|-------------|-----------------|
|                | (%)           | (%)         | (%)             |
| 1              | 79.68         | .39         | 19.89           |
| 2              | 63.37         | .26         | 36.37           |
| 3              | 87.63         | .39         | 11.94           |
| 4              | 80.55         | .17         | 19.27           |
| 5              | 93.19         | .17         | 6.59            |
| 6              | 85.59         | .22         | 14.24           |
| 7              | 89.32         | .13         | 10.55           |
| 8              | 90.45         | .30         | 9.19            |
| 9 <sup>1</sup> |               |             |                 |
| 10             | 53.80         | .13         | 44.62           |
| 11             | 84.07         | .22         | 15.71           |
| 12             | 78.82         | .09         | 21.09           |

<sup>1</sup>Strain 9 eggs were not delivered to the Research Station.



Table 2. Analysis of Residue Breakout on Eggs Set in Each Incubator Tray

| Strain         | <u>Embryo Mortality</u> |                     |           |          |              |                 |          |          |           |                 |                 | Egg Placed Small End Up | Cracked Eggs |
|----------------|-------------------------|---------------------|-----------|----------|--------------|-----------------|----------|----------|-----------|-----------------|-----------------|-------------------------|--------------|
|                | Infertile Eggs          | Early Dead Membrane | E D Blood | Mid Dead | Pre Air Cell | Air Cell Broken | Pip Live | Pip Dead | Contam. 1 | Abnormal Shells | Abnormal Embryo |                         |              |
|                | %                       | %                   | %         | %        | %            | %               | %        | %        | %         | %               | %               | %                       | %            |
| 1              | 3.86                    | 2.17                | 2.30      | .43      | 5.38         | .17             | 5.04     | .52      | 3.04      | 0               | .17             | .69                     | .30          |
| 2              | 20.35                   | 2.78                | 3.34      | .87      | 2.04         | .39             | 6.51     | .30      | 2.82      | 0               | .04             | .91                     | .30          |
| 3              | 3.78                    | 1.17                | 1.60      | .65      | 1.39         | 0               | 2.91     | .39      | 2.17      | 0               | 0               | .22                     | .13          |
| 4              | 10.16                   | 1.91                | 1.87      | .56      | 2.04         | .13             | 2.34     | .17      | 2.95      | 0               | .09             | .13                     | .17          |
| 5              | 1.91                    | .52                 | .99       | .61      | 1.35         | .22             | .74      | .26      | 1.78      | 0               | .09             | .04                     | .61          |
| 6              | 3.17                    | 1.52                | 1.78      | .87      | 2.86         | .13             | 3.73     | .17      | 3.25      | .09             | .30             | .17                     | .69          |
| 7              | 4.90                    | 1.13                | .78       | .30      | .78          | .35             | 1.91     | .48      | 1.21      | 0               | 0               | .13                     | .04          |
| 8              | 3.56                    | .78                 | 1.17      | .26      | 1.78         | .30             | 1.09     | .17      | 1.26      | 0               | .04             | .09                     | .09          |
| 9 <sup>2</sup> |                         |                     |           |          |              |                 |          |          |           |                 |                 |                         |              |
| 0              | 28.08                   | 4.25                | 3.21      | .61      | 2.82         | .82             | 4.25     | .56      | 3.99      | 0               | .09             | 1.21                    | .26          |
| 1              | 4.73                    | 2.43                | 2.34      | .69      | 3.91         | .26             | 1.09     | .35      | 3.39      | .09             | .17             | .22                     | .26          |
| 2              | 8.25                    | 2.13                | 2.26      | .61      | 5.08         | .61             | 1.99     | .61      | 3.95      | 0               | .35             | .78                     | .43          |

Contaminated Eggs

Strain 9 eggs were not delivered to the Research Station.

## Strain Entries 30th NCLP&amp;MT

| Breeders                                                                                | Strain              | Source                                                                                                                                                         |
|-----------------------------------------------------------------------------------------|---------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| H & N International<br>3825 154th Ave., N.E.<br>Redmond, WA 98052                       | <u>"Nick Chick"</u> | Wheelock Hatchery<br>2170 Wayne Road<br>Chambersburg, PA 17201                                                                                                 |
|                                                                                         | <u>"Brown Nick"</u> | Wheelock Hatchery                                                                                                                                              |
| Hyline International<br>P.O. Box 310<br>Dallas Center, IA 50063                         | <u>W - 36</u>       | Hy-Line International<br>4432 Highway 213, Box 309<br>Mansfield, GA 30255                                                                                      |
|                                                                                         | <u>Hyline Brown</u> |                                                                                                                                                                |
| ISA/Babcock<br>P.O. Box 280<br>Ithaca, NY 14850-0280                                    | <u>B 300 A</u>      | Lititz Hatchery<br>631 W. Orange Street<br>Lititz, PA                                                                                                          |
|                                                                                         | <u>B 300 B</u>      | (Same)                                                                                                                                                         |
|                                                                                         | <u>ISA Brown</u>    | American Selected Products<br>631 W. Orange Street<br>Lititz, PA 14543                                                                                         |
| Euribrid Inc.<br>Hisex Division<br>P.O. Box 719<br>Troutman, NC 28166                   | <u>Hisex White</u>  | Clock & DeCloux Inc.<br>1609 Trumansburg Rd.<br>Ithaca, NY 14850                                                                                               |
|                                                                                         | <u>Hisex Brown</u>  |                                                                                                                                                                |
| Shaver Poultry Breeding Farms Ltd.<br>P.O. Box 400<br>Cambridge, Ontario, Canada N1R5V9 | <u>Shaver White</u> | American Selected Products Inc.<br>575 Copeland Mill Rd., Suite 1-8<br>Westerville, OH 43081                                                                   |
| Dekalb Ag Research, Inc.<br>3100 Sycamore Road<br>Dekalb, IL 60115                      | <u>Delta</u>        | Acquired for the test by<br>North Carolina Egg Producers<br>in cooperation with North Carolina<br>Dept. of Agriculture and North Carolina<br>State University. |
|                                                                                         | <u>XL Link</u>      |                                                                                                                                                                |