

NORTH CAROLINA STATE UNIVERSITY

SCHOOL OF AGRICULTURE AND LIFE SCIENCES

OFFICE OF EXTENSION POULTRY SCIENCE
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Enclosed is the report of the growing period for the Eighteenth North Carolina Random Sample Laying Test which you have requested. Please circulate it among your associates in order that maximum use of it may be made. If additional copies are needed, the request 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
Extension Poultry Specialist

EIGHTEENTH NORTH CAROLINA RANDOM SAMPLE LAYING TEST
Growing Report
March 26, 1976 through August 22, 1976

The North Carolina Random Sample Laying Tests are conducted under the auspices of the Agricultural Extension Service of North Carolina State University and the North Carolina Department of Agriculture. Mr. T. R. Burleson, Jr., is Resident Manager of the Tests and Dr. G. A. Martin is Project Leader. The purpose of the tests is to assist poultrymen in evaluating stocks of commercial layers and management systems.

Two cage management systems are compared to a combination half-litter and half-slat management system.

Samples of 1,080 freshly gathered eggs were taken at randomly selected supply flocks, or by random sampling from egg rooms when nest sampling was not feasible. Public employees in agriculture selected the samples, sealed the cases and sent them to the test site where all eggs were incubated; 360 sexed pullets (when available) were placed for each entry. Two pens of 60 birds each were placed on pine shavings litter floors at 1.4 sq. ft. per bird for 150 days. Four groups of 60 each were placed in 24" x 20" wire cages. Floor space was 24 sq. in. for the first five weeks and 56 sq. in. from five weeks to 150 days. At 150 days, the litter grown birds were randomly reduced to 50 birds and kept in the same pens at 1.74 sq. ft. per bird for the laying period with hardwood slats over half of the area (Table L). At the same time, two groups of the



COOPERATIVE EXTENSION WORK IN AGRICULTURE AND HOME ECONOMICS. NORTH CAROLINA STATE UNIVERSITY AT RALEIGH. 100 COUNTIES AND U. S. DEPARTMENT OF AGRICULTURE COOPERATING

cage grown birds that had been detoed at day-old (Table K1) were randomly reduced to 50 birds each and housed in 24" x 20" cages at seven birds per cage. The other two groups which were not detoed were randomly reduced to 52 birds each and housed in 10" x 18" cages at two birds per cage (Table K3).

Commercial all-mash rations were purchased on contract. Starting mash (20% protein) was fed at a rate of 2.7 pounds per bird; then growing mash (16% protein) was fed ad lib until housing at 150 days. Troughs were allowed to run empty approximately two hours per day from 12 to 20 weeks of age. Commercial laying mash is being fed during the laying period.

All birds were vaccinated at day-old for Marek's with DPL live turkey herpes virus vaccine grown in chicken tissue culture and lyophilized. We express our appreciation to Dr. Hiram Lasher, Sterwin Chemical Company, Millsboro, Delaware for providing this vaccine for the flock.

All birds were debeaked at seven days; vaccinated for Newcastle and bronchitis in water at seven days and four weeks; vaccinated for Pox via wing-web at nine weeks; vaccinated for Avian encephalomyelitis at twelve weeks; and vaccinated with LaSota Newcastle and bronchitis at seventeen weeks.

In this test, North Carolina has limited entries to Category I. As in the previous test, Category I-A is stocks fully supported by the breeder or distributor, I-B is stocks acquired with approval of the breeder or distributor but without financial participation, and I-C is stocks acquired without approval of the breeder or distributor. The category of each entry is shown on the stock list and the cooperation column indicates if the breeder entered the stock and provided financial support (Yes), if the distributor made the entry (Dist.), or if the stock was acquired by the management without breeder or distributor request (No).

The facilities released by limiting entries in this test to nine are being used for a series of management research trials. We are attempting to identify the causes of the reduced egg numbers for caged birds when compared to birds housed in litter-slat pens. We express our appreciation to Babcock Poultry Farm, Inc., DeKalb AgResearch, Inc., Hubbard Farms, Inc., Shaver Poultry Breeding Farms, Ltd., and their distributors for providing extra hatching eggs to be used in this research. Research results will be published from time to time as completed.

The tables list: the average combined data for the entry (Table 17G-C), the data for the litter housing (Table 17G-L), cage growing for two-bird laying cages (Table 17G-K3), and detoed cage growing for seven-bird laying cages (Table 17G-K1). The entry number was drawn at random. The breeder is fully identified later, with stock identification, entry category, cooperater indication, and source of sample listed. Net pullets at one week excludes first week mortality, sexing errors, and accidental deaths. Mortality 8 through 150 days is average of group data. Average feed per pullet for 150 days is based on bird-days and does not charge against survivors the feed consumed by birds that died. Average body weight at 150 days is average weight of survivors. Feed and chick cost per

pullet housed distributes the total cost of the net pullets at one week and the feed which they consumed equally among survivors and, therefore, includes the cost of mortality. Feed costs are based upon three-year averages of monthly price quotations from the North Carolina Department of Agriculture. Chick price is the average of the quoted price for the entries and is the same for each entry. Average eggs per pullet at 150 days indicates general maturity level of the entry at housing.

GROWING PERIOD - TABLE 18G-K1 (CAGES)

| <u>Entry No.</u> | <u>Breeder</u> | <u>Net Pullets at One Week</u> | <u>Mortality 8 - 150 Days %</u> | <u>Av. Lbs. Feed Per Pullet 150 Days</u> | <u>Av. Body Weight at 150 Days (Lbs.)</u> | <u>Feed & Chick Cost/Pullet Housed</u> | <u>Eggs Per Pullet at 150 Days</u> |
|------------------|------------------------|--------------------------------|---------------------------------|--|---|--|------------------------------------|
| 1 | Hubbard (Gld. Comet) | 119 | 4.2 | 14.5 | 3.06 | \$ 1.41 | 0.02 |
| 2 | Shaver (288) | 116 | 1.7 | 13.0 | 2.84 | 1.34 | 0.01 |
| 3 | H&N ("Nick Chick") | 118 | 0.9 | 12.5 | 2.63 | 1.29 | 0.02 |
| 4 | DeKalb (XL-Link) | 115 | 5.2 | 13.4 | 2.75 | 1.39 | 0.03 |
| 5 | Hy-Line (W-36) | 108 | 2.0 | 14.2 | 2.97 | 1.46 | 0.00 |
| 6 | Babcock (B-300) | 119 | 4.2 | 12.9 | 2.62 | 1.35 | 0.38 |
| 7 | DeKalb (Amber Link) | 120 | 2.5 | 12.9 | 2.89 | 1.35 | 0.00 |
| 8 | Euribrid (Hisex White) | 112 | 0.9 | 13.2 | 2.62 | 1.34 | 0.98 |
| 9 | Babcock (B-380) | 121 | 4.2 | 13.2 | 3.20 | 1.37 | 0.00 |
| | Average | 116 | 2.9 | 13.3 | 2.84 | 1.37 | 0.16 |

GROWING PERIOD - TABLE 18G-K3 (CAGES)

| | | | | | | | |
|---|------------------------|-----|-----|------|------|---------|------|
| 1 | Hubbard (Gld. Comet) | 120 | 4.2 | 13.9 | 2.94 | \$ 1.46 | 0.04 |
| 2 | Shaver (288) | 116 | 1.7 | 13.1 | 2.66 | 1.35 | 0.01 |
| 3 | H&N ("Nick Chick") | 119 | 1.7 | 12.8 | 2.53 | 1.33 | 0.03 |
| 4 | DeKalb (XL-Link) | 107 | 4.7 | 14.2 | 2.88 | 1.46 | 0.20 |
| 5 | Hy-Line (W-36) | 109 | 3.7 | 15.1 | 2.77 | 1.54 | 0.05 |
| 6 | Babcock (B-300) | 123 | 4.9 | 12.7 | 2.60 | 1.34 | 0.09 |
| 7 | DeKalb (Amber Link) | 115 | 0.9 | 13.3 | 2.98 | 1.37 | 0.00 |
| 8 | Euribrid (Hisex White) | 121 | 1.7 | 12.6 | 2.58 | 1.32 | 0.28 |
| 9 | Babcock (B-380) | 119 | 5.1 | 14.3 | 3.16 | 1.48 | 0.00 |
| | Average | 117 | 3.2 | 13.6 | 2.79 | 1.41 | 0.08 |

GROWING PERIOD - TABLE 18G-L (LITTER)

| <u>Entry No.</u> | <u>Breeder</u> | <u>Net Pullets at One Week</u> | <u>Mortality 8 - 150 Days %</u> | <u>Av. Lbs. Feed Per Pullet 150 Days</u> | <u>Av. Body Weight at 150 Days (Lbs.)</u> | <u>Feed & Chick Cost/Pullet Housed</u> | <u>Eggs Per Pullet at 150 Days</u> |
|------------------|------------------------|--------------------------------|---------------------------------|--|---|--|------------------------------------|
| 1 | Hubbard (Gld. Comet) | 120 | 0.0 | 15.0 | 3.28 | \$ 1.49 | 0.00 |
| 2 | Shaver (288) | 116 | 2.6 | 14.5 | 3.15 | 1.48 | 0.26 |
| 3 | H&N ("Nick Chick") | 117 | 0.8 | 14.1 | 2.84 | 1.43 | 0.22 |
| 4 | DeKalb (XL-Link) | 117 | 1.8 | 14.6 | 3.12 | 1.47 | 0.48 |
| 5 | Hy-Line (W-36) | 111 | 1.8 | 15.5 | 3.29 | 1.55 | 0.05 |
| 6 | Babcock (B-300) | 116 | 0.0 | 14.5 | 2.92 | 1.46 | 0.96 |
| 7 | DeKalb (Amber Link) | 116 | 0.9 | 15.8 | 3.58 | 1.56 | 0.00 |
| 8 | Euribrid (Hisex White) | 116 | 0.0 | 14.1 | 2.97 | 1.43 | 1.71 |
| 9 | Babcock (B-380) | 119 | 0.0 | 15.5 | 3.55 | 1.53 | 0.06 |
| | Average | 116 | 0.9 | 14.8 | 3.19 | 1.49 | 0.42 |

GROWING PERIOD - TABLE 18G-C (AVERAGE)

| | | | | | | | |
|---|------------------------|-----|-----|------|------|---------|------|
| 1 | Hubbard (Gld. Comet) | 359 | 2.8 | 14.5 | 3.09 | \$ 1.45 | 0.02 |
| 2 | Shaver (288) | 348 | 2.0 | 13.5 | 2.88 | 1.39 | 0.09 |
| 3 | H&N ("Nick Chick") | 354 | 1.1 | 13.1 | 2.67 | 1.35 | 0.09 |
| 4 | DeKalb (XL-Link) | 339 | 3.9 | 14.1 | 2.92 | 1.44 | 0.24 |
| 5 | Hy-Line (W-36) | 328 | 2.5 | 14.9 | 3.01 | 1.52 | 0.03 |
| 6 | Babcock (B-300) | 358 | 3.0 | 13.4 | 2.71 | 1.38 | 0.48 |
| 7 | DeKalb (Amber Link) | 351 | 1.4 | 14.0 | 3.15 | 1.42 | 0.00 |
| 8 | Euribrid (Hisex White) | 349 | 0.9 | 13.3 | 2.72 | 1.36 | 0.99 |
| 9 | Babcock (B-380) | 359 | 3.1 | 14.3 | 3.30 | 1.46 | 0.02 |
| | Average | 349 | 2.3 | 13.9 | 2.94 | 1.42 | 0.22 |

| Breeder | Stock Identi- fication | Entry Cate- gory* | Source of Sample |
|---|-----------------------------------|-------------------------|---|
| Babcock Poultry Farm, Inc. Box 280 Ithaca, NY 14850 | Babcock B-300F WL INX | I-A YES | Harrold's Hatchery P. O. Box 98 Winterville, GA 30683 |
| Babcock Poultry Farm, Inc. Box 280 Ithaca, NY 14850 | Babcock B-380 RIRxSYN IBX | I-A 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 | Hillcrest Hatchery Route 2, Box 163 Bogart, GA 30622 |
| DeKalb AgResearch, Inc. Sycamore Road DeKalb, IL 60115 | DeKalb Amber Link RIRxSYN BX | I-A YES | Hillcrest Hatchery Route 2, Box 163 Bogart, GA 30622 |
| Euribrid B.U. by Pilch, Inc. Box 438, Troutman, NC 28166 | Hisex White WL 4wSX | I-A YES | Chicks of Dixie, Inc. 260 Howard Street, N.E. Atlanta, GA 30317 |
| H&N, Inc. Entry by Owens Hatchery, Inc. Box 125 Dahlonega, GA 30533 | H&N "Nick Chick" WL 4wSX | I-A DIST. | Owens Hatchery, Inc. Box 125 Dahlonega, GA 30533 |
| Hubbard Farms, Inc. Walpole, NH 03608 | Hubbard Golden Comet NHxSYN BX | I-A YES | Hubbard Farms, Inc. Statesville, NC 28677 |
| Hy-Line International 1206 Mulberry Des Moines, IO 50309 | Hy-Line W-36 INX | I-C NO | Not Applicable |
| Shaver Poultry Breeding Farms, Ltd. Box 400 Galt, Cambridge Ontario, NIR 5W6, CANADA | Starcross 288 WL SX | I-A YES | Delta Hatcheries Lake City, FL 32055 |

*See Text. Eighteenth Test.