

WHAT ARE THE EFFECTS OF VARYING DAY LENGTH ON GROWTH OF BROILERS?

R. MICHAEL HULET
Associate Prof.
Dept. Poultry Science

Many investigators have looked at various day lengths to determine what is optimum for broiler growth and meat production. Continuous daylight, increasing day lengths, intermittent lighting, and short and long day lengths have been compared.

The data indicate that the most rapid growth for modern broilers occurs when birds are grown under continuous 23- or 24-hour day lengths. Continuous daylight allows birds access to feed and water at all times, especially during the coolest portion of the day during hot weather. Continuous day length allows broilers to reach their genetic potential for growth and meat production.

However, genetic selection for increased broiler growth has resulted in chickens developing some metabolic lesions if not correctly managed. Rapidly growing birds have a higher incidence of 1) Sudden Death Syndrome (SDS), 2) leg abnormalities such as tibial dyschondroplasia (TD), rotated and twisted tibia or femurs, or rickets-type slipped tendons, and 3) ascities, which is also called "water belly." All these lesions have been linked with the rapid rate of growth of broilers.

Some investigators have advocated different management regimes to prevent or reduce the development of the symptoms of metabolic diseases among rapidly growing birds. Investigators from Canada (Classen and Riddel, 1989; Classen et al, 1991; Blair et al, 1993) have shown that short day lengths at early ages can decrease skeletal disorders and incidences of

SDS

Alabama researchers (Renden et al, 1991 and 1992) also showed fewer leg abnormalities and improved carcass yield with a lighting program that provided decreased day length early in the production cycle.

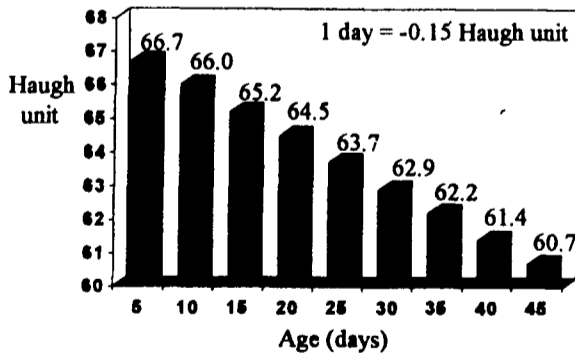
However, all of these experiments resulted in significantly lower body weights. Most of the decreased day-length programs reduced the day length to 6 hours of light at 3 to 5 days of age causing a reduction in feed consumption and bird growth during this critical period. Other researchers have merely reduced feed provided to the birds for an 11- to 14 day period early in life to reduce growth and hopefully reduce the other metabolic side effects. This strategy has also been successful in reducing metabolic lesions but still at the expense of reduced body weight at market age.

In 1997, a study was reported from Penn State University at poultry science meetings in Georgia, where light was reduced to 16 hours a day from 3 to 28 days of age and then increased gradually as the birds approached market age. This lighting regime was tested against a conventional 23-hour per day lighting treatment on three different strain crosses of birds.

Although there were some strain differences in body growth, it was found that the birds on the experimental lighting treatments had two percent less mortality at seven weeks and actually an increase in body weight over those raised on the control (23 hr) lighting system. The lowered percentage mortality and enhanced growth was consistent for the three different strain crosses of broilers.

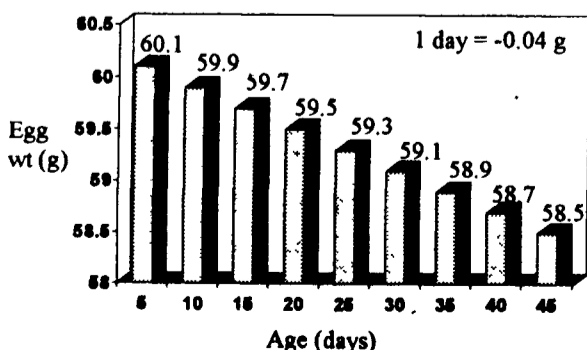
Increased activity was noted for the broilers on the experimental lighting treatment and may have contributed to the improved health and growth of the broilers.

Egg Age to Haugh Unit Relationship
all eggs (771 doz)



R square = 0.0269, P = 0.001, 0 = 67.5 Haugh units

Egg Age to Weight Relationship
all eggs (771 dozen)



R square = 0.0124, P = 0.01, 0 = 60.3 g

Therefore, reduced lighting treatments starting at three days of age was shown to be an effective management tool for reducing metabolic lesions and mortality while promoting growth of broilers.

got milk?

BUY, SELL, TRADE OR RENT THROUGH THE CLASSIFIED ADS

PHONE: 717-626-1164 or 717-394-3047
FAX 717-733-6058

Mon., Tues., Wed., Fri. 8 AM to 5 PM; Thurs. 7 AM to 5 PM

1a CONSTRUCTION EQUIPMENT

Schramm 85 CFM air compressor, trailer mounted type, \$950. 610/488-9291.

Loaders tires, 18.00X25, 24 ply General's new recaps, \$250.00 ea. (717)292-5013



Little Giant 6 ft. sno thrower w/VH4D Visc engine w/power chute \$2,500

Heavy Equipment Loader Parts, Inc.
10070 Allentown Blvd., Grantville, PA 17028
(717) 469-0039 (800) 446-0505

Case 602, 1102 Rollers Demonstrators
Call For Special Pricing

- Case 580C Cab, ExHoe.....\$12,900
- Case 580D Canopy, ExHoe.....\$14,900
- Case 580D Canopy, Std, Hoe, New Eng.....\$15,900
- Case 580K 2wd, Cab, ExHoe.....\$22,500
- Case 580K 4wd, Cab, ExHoe.....\$28,500
- Case 580K 2wd, Canopy, Std.....\$21,900
- Case 580SK 2wd, Canopy, Std, Hoe 1900 Hrs.....\$25,900
- Case 580SK Turbo, Canopy, Std, Hoe 1250 Hrs.....\$26,900
- Case 1845C Uniloader 2500 Hrs.....\$12,500
- Case 1845C Uniloader 3000 Hrs.....\$11,900
- Case 450C Dozer, New U.C., App 2000 Hrs...\$28,500
- Case 850D Dozer, New U.C., App 3500 Hrs...\$31,900
- Case 855D Loader, 4-in-1 Bucket.....\$37,900

Rental Returns
602B, 1102 Rollers In Stock
Stanley 695 Hammer

Call For Pricing on Rental Return

Vernon E. Stup Co.

5859 Urbana Pike Frederick, Md. 21701

301-663-3185

FOR NEW AND USED CONSTRUCTION EQUIPMENT PARTS AND ATTACHMENTS
CALL

H.E.L.P., INC.

(717) 469-0039
1-800-446-0505

Specializing In Caterpillar
Parts also available for Case, John Deere, IHC, Fiat, Etc.

HEAVY EQUIPMENT LOADER PARTS, INC.

10070 Allentown Blvd.
Grantville, PA 17028

Michigan loader, model 75DC-3A \$8,000 or trade for JD 4020 or JD 350 crawler. Lanco. Call between 4:30-5:30, (717)721-9164.

National truck crane, unmounted, 8 ton cap., 65' boom height w/18' body, very good condition, \$9000 OBO. 717/359-9423.

New 24' 10-ton air brake trailer; New 24' 9-ton 3 axle trailer. Kutz Farm Equipment, Inc. 717/345-4882.

Overseeder/dethatcher, Gandy 2848SS, 3pt, PTO, 48"W w/rollers, excellent condition, used 3 times, \$4500. 717-225-7343

Skid Loader: Lahman only 83 hours, aux hyd, garaged, \$7,750 (717)246-3336.

Skid steer buckets (2), 5', severe duty, 8x3/4 cutting edge, universal fit, never used, \$400 OBO. (800)414-0404.

Sperry New Holland 775 skid loader, over sized bucket, \$3,000.00 as sits. Call after 12:00 (610)323-4390

Terex 82-30 w/ripper, SS#61727, 671 engine, excellent condition, \$12,500. 814-669-4536

WANT: AC HD4 dozer, any condition. Call (610)767-1857.

PARTS PRICED RIGHT
DISMANTLING MOST MAKES & MODELS

OF CONSTRUCTION EQUIPMENT

- | | | |
|------------|-------------|------------------------|
| Cat | IHC | Gallon |
| Case | Michigan | Wabco |
| John Deere | Hough | Dynahoe |
| Trojan | Terex | Koehring |
| Drott | Hein Werner | AC/Fiat Allis & Others |

Over 650 Machines Dismantled

NATIONWIDE PARTS LOCATING SERVICE

In addition to our own large inventory, we have two computerized parts locator services, nationwide & Canada, ready to serve you. In less than a minute, over 600 used & new parts & equipment suppliers will receive your parts request. Parts are located easily & at substantial savings. Try Our Services
Save \$\$\$ Parts Shipped Anywhere Direct To You. All Parts Guaranteed
"We Return All Phone Calls"

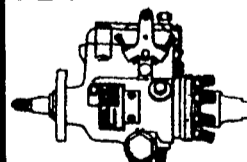
BALANDA EQUIPMENT CO., INC.

P.O. Box 407 • Route 29 • Palm, PA 18070
Phone: (215) 679-3900
Fax: (215) 679-8727

TOLL FREE: 1-800-322-8030

ATTENTION DIESEL OWNERS

COUPON SPECIAL
Present this coupon at time of rebuild and get \$35 off



Member of
ADS

See what our customers say about us!

"You Folks Run a GREAT Outfit!"

Steve Sager,
West Chester, PA

"Thank you for all your help with the injection pump. Everything went well. If anybody asks about injection pump work, I'll send them to you. It has more power than ever! Thanks again"

Michael Mohn,
Shoemakersville, PA

Satisfaction Guaranteed for over a decade

Call Toll-Free 1-800-864-7723

"Lancaster County's Best Fuel Injection Shop"

Member of **ADS**

1030 Main Street (Rt. 23), Blue Ball, PA 17508-0426
• 717-354-2016