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LIGHTING FOR LAYING HENS

By C. E. LAMPMAN

The stimulating effect of light on laying hens for increased egg production has been known for a long time. Research and field trials show us that artificial lights should be used to give the laying hen a 13- to 14-hour day from the time she is put in the laying house in the fall throughout the laying year. This was standard practice for many years. We knew that it worked well for spring-hatched pullets, not so well for fall- and winter-hatched pullets. We didn't know why until more recently.

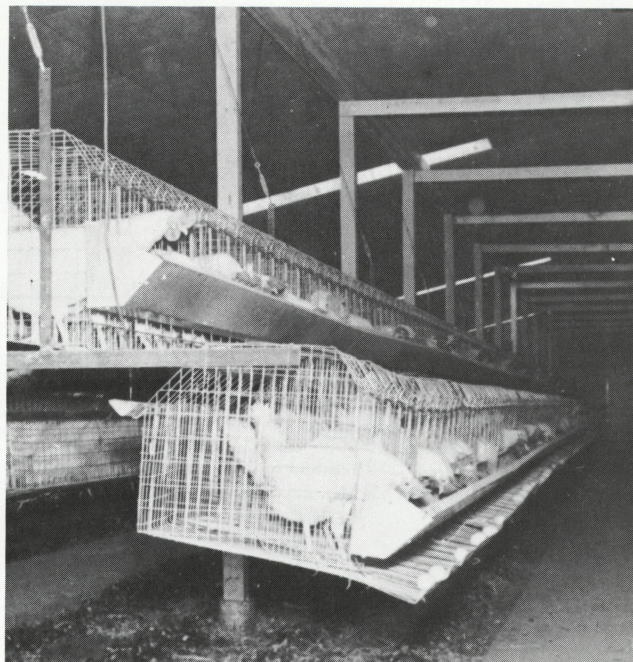
WHAT WE KNOW

We now know that in the case of spring-hatched pullets we were using basic principles involving the stimulating effect of light on the reproductive system. Light passing through the eye via the optic nerve and central nervous system of the anterior pituitary gland triggers the release of hormones which stimulate the ovaries to increased activity.

Increasing periods of light (day lengths) stimulate early maturity in the developing pullet and increase egg production in the laying hen.

Decreasing day lengths delay sexual maturity and tend to limit egg production to less than the maximum potential of the laying hen.

C. E. Lampman is professor emeritus, Department of Poultry Science.



When we understand the basic principles involved, we can successfully use any one of several systems or a reasonable modification to fit individual conditions. We can expect the following benefits:

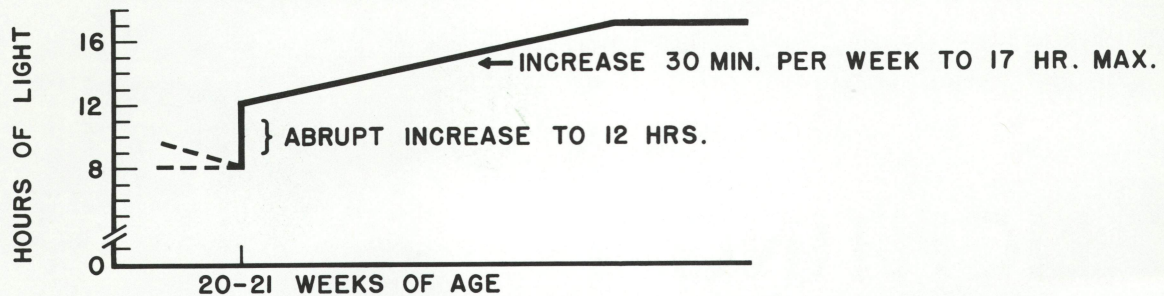
1. More uniform development of pullets.
2. Properly timed sexual development.
3. Fewer "peewee" eggs and larger egg size earlier in the laying period.
4. One to two dozen more eggs per hen during the first laying year.

We are primarily concerned with controlled lighting applied to laying hens. What then do we need to consider?

1. What kind of laying house do we have—a house with windows admitting natural light or with no windows?
2. When were the pullets hatched and when will they be 20 weeks old?
3. What lighting schedule was used before the pullets reached 20 to 21 weeks of age? This is the age at which most authorities agree that the day length should be increased to provide the stimulus for increased activity of the ovaries for egg production.

WHAT TO DO ABOUT IT? THE FOLLOWING DIAGRAMS ILLUSTRATE THE LIGHTING RECOMMENDATIONS FOR LEGHORN HENS. HOURS OF LIGHT ARE INDICATED AT THE LEFT AND AGE OF PULLETS AT THE BOTTOM.

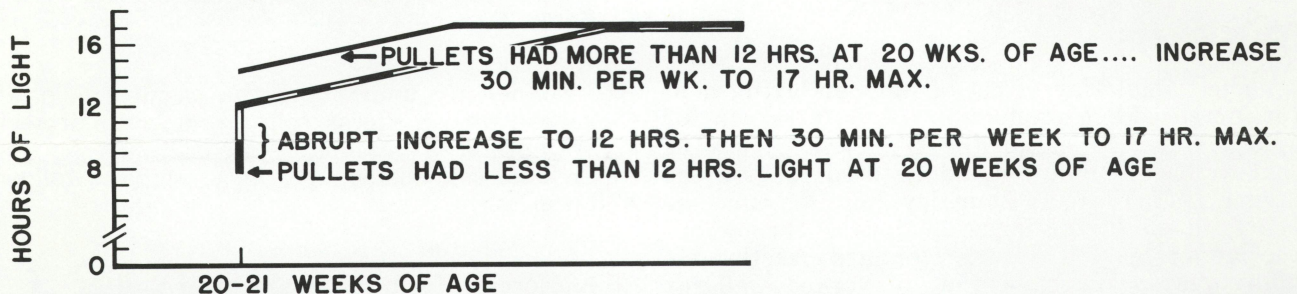
WINDOWLESS HOUSES WITH POSITIVE LIGHT CONTROL



This illustrates the program in which windowless laying houses are used for positive control of the lighting schedule. In this case an 8-hour day length is shown at 20 weeks, regardless of whether the growing schedule was a step-down system or a continuous 8-hour day length. Light would be increased abruptly at 20 or 21 weeks to

12 hours, followed by an increase of 30 minutes per week until a maximum day length of 17 hours is reached. The layers would then be maintained at this level throughout the rest of the laying period. Most authorities agree that 17 hours maximum day length is sufficient for Leghorns.

NATURAL DAYLIGHT PULLETS PRIOR TO 20 WEEKS OF AGE



This diagram is based upon natural daylight prior to 20 weeks of age and may be used in laying houses which admit natural light. The solid line indicates the program for pullets which have received more than 12 hours daylight up to 20 weeks of age. Day length would be increased 30 minutes per week up to a maximum of 17 hours. The dotted line indicates the program if the pullets received less than 12 hours up to 20 weeks.

Note these pullets should be given an abrupt increase of day length to 12 hours and then a weekly increase of 30 minutes per week to a maximum of 17 hours and continued at this level.

For those who may not find it possible to follow a specific program of light control, a constant day length between 13 and 16 hours through the growing period and continued through the laying period is a good compromise.

ADDITIONAL COMMENTS

1. Do not expose pullets to increasing day lengths prior to 20 weeks of age—certainly not before 18 weeks of age.
2. Do not expose layers to decreasing day lengths, if they are getting natural light, after August 1 to 15. Use supplementary artificial light to maintain or increase day lengths.

LIGHT INTENSITY FOR LAYERS

One to three footcandles at feedtrough level is considered adequate and can be obtained by using 40-watt light bulbs, preferably with reflectors, spaced 10 to 12 feet apart. In cage operations, the location will necessarily be above the aisle so that the greater light intensity will be over the feedtrough.

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James E. Kraus