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In many ways we are still where we were 50 years ago in layer lighting. Reports in the literature prior to 1920 showed the need for long day length--14 hours of day length with natural daylight in most cases extended by kerosene or gas lanterns. While the lanterns are gone, we still follow for our most traditional layer lighting programs somewhere around a 14-hour day length.

Research and experience in rearing pullets and layers have lead to a couple of lighting guidelines that are still good advice: Do not decrease day length on laying hens; do not increase day length on growing pullets until they are ready for light stimulation to come into egg production. Within these guidelines many variations in lighting programs are possible. From a review of lighting programs and experiments, you could conclude that no single lighting program is better than all others.

Electricity has been inexpensive and energy for layer lighting is still not a major cost in egg production. Energy costs are likely to keep on increasing so we should look at all means of reducing production costs as well as conserve resources as we evaluate management procedures. In the past, we have been primarily concerned with viewing lighting programs based only on flock production during the laying cycle.

A number of innovations in lighting have been proposed which may involve intensity, duration, period of day and wavelength as well as being constant, intermittent or even changing the length of the normal 24-hour day for the flock. A lighting program should be considered in relation to other management procedures and be evaluated on these criteria:

1. Influence on egg production.
2. Provide adequate light to work in house as necessary.
3. Influence on cannibalism, feather picking, other vices.
4. Influence on feed consumption.
5. Cost.

Most conventional layer lighting programs increase the light on the nearly developed pullet to 14 to 17 hours day length at 18 to 22 weeks of age. This increase may be a single one-time light adjustment or involve a series of increases in day length until the maximum day length is reached. These programs provide a continuous light period during the 24-hour day so there is only one light-dark cycle.

A number of experiments and field studies have shown that satisfactory egg production can be attained on intermittent lighting programs--programs that involve more than one light-dark cycle in a 24-hour period and usually involve less total light exposure to the birds than conventional lighting programs. The "carryover" effect of light stimulation to the dark period on the bird's reproductive system, the length of the effective "day" as visualized by the bird, and the light-dark cycle may all be influences on egg production. These influences have not been fully explained, but programs involving intermittent lighting periods of varying light-dark duration have been the subject of many experiments and some successful commercial applications. Poultrymen should be aware of these developments and consider the possible adoption of proven commercial programs into their management schedules.

Electricity costs for lighting in a 30,000 layer house on many traditional programs range from $2500 to $3000 per year. This cost might be reduced by half or more in some instances using intermittent lighting of lesser intensity. Houses with windows have less adaptability to intermittent lighting. Pullets raised on constant short-day low intensity lighting programs and housed in light-tight layer facilities offer the most flexibility as far as short light day programming during the laying period is concerned.

Outside the realm of practical application to the poultryman today are a number of other investigations involving alteration of the 24-hour day length. These attempts would try to match an optimum day length with the reproductive capability of the bird to maximize output of egg numbers or egg mass. These experiments should not be discouraged, even though a breakthrough would result in awkward management situations due to the longer or shorter day-length cycle. If the breakthrough comes, the enterprising poultryman will be ingenious enough to devise systems to manage the birds to take advantage of the economic gains that could be achieved.