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Light Up the Hen House

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IF I USE lights in the hen house will I get more eggs? That question is being pondered by a lot of Iowa farm folk. Most of them have more layers than in past years. They want to make them produce badly needed food to aid the Food for Freedom war effort as well as to boost the family income.

Using lights is likely to increase the production of eggs during the fall and winter, but you'll probably get fewer eggs in the spring and summer. Experimental work carried on in numerous states indicates that the total production for the year is no greater when lights are used on layers—the fall and winter production is merely increased at the expense of spring and summer eggs, which are lowest in price.

Probably one of the most significant reports on the use of lights comes from the Oklahoma Station. After a 10-year study with all-night lights, Oklahoma reported:

**10 Years’ Results**

1. All-night lights did not increase or decrease the annual production of eggs by pullets or hens.
2. Artificial lights increased the percentage of eggs produced during November and December in every year of the 10 except one.
3. Hens and pullets under all-night lights laid fewer eggs in March, April and May than similar layers that didn't have lights.
4. A greater response was obtained in October, November and December with yearling hens than with pullets or older hens.
5. All-night lights may be beneficial during hot weather (July, August and September) but the results secured are not conclusive.
6. All-night lights did not decrease the hatchability of the eggs or cause any increase in death loss.
7. The amount of feed eaten was about the same by the birds under lights as by similar ones getting no artificial light.

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Picture at the extreme left (opposite page) shows pheasant hen nesting. In the scene next to it you see what happens when a nest is mowed over just after it has hatched out. All but three of the chicks were killed and the foot of the pheasant hen was amputated and fell into the nest.

Predation causes failure of many pheasant nests, especially the earlier ones. In Winnebago County, the principal egg-eaters are crows, skunks, cats and weasels. Crows commit the most robberies, but their activities are most pronounced on early nests in poor cover and nests exposed by mowing and harvesting. Thus, many of these nests would have little chance of success even if the crows left them alone.

Depredations by cats are not common, but cause serious losses, for the cats often kill the hens on their nests. Killing stray cats and known egg-eaters are sound measures.

Considering the heavy losses of nests, one might wonder how there can possibly be so many pheasants in northern Iowa. The answer is that it doesn’t take very many successful nests to produce lots of young birds.

In 1939 an average of six chicks from each successful nest studied reached shooting age, and in 1940 this average was only slightly lower. Fifteen successful nests to a square mile produced about 90 shootable young to that square mile in 1939.

Another factor which has helped the pheasants stage a comeback since the hard winter of 1935-36 is the tendency for females to renest until they have brought off a successful brood. In a favorable year some 60 to 80 percent of the females, through repeated trials, are able to produce a brood. This habit accounts for most of the late nests and broods. It isn’t likely that pheasants have second broods regularly.

Early clutches are larger than late ones, and chicks hatched early are likely to be heavier at hunting time than younger chicks. Thus, saving early nests has some advantages.

A method of providing nesting cover all through the spring and summer is to leave undisturbed areas of sweet clover which were planted with a small grain nurse crop the year before.

A few birds banded early in the fall in Winnebago County were shot, all within a half-mile of the place of banding. So it is likely that in northern Iowa a farmer has a chance to shoot at the pheasants which were produced on his farm.

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The theory advanced when artificial lights were first used on hens was that the lights caused the hens to lay more eggs because it gave them a longer working day and they, therefore, ate more feed. Later, experiment station workers began to conclude that the reason lights stepped up fall and early winter egg production was because of the stimulating effect of the lights on the pituitary gland—which, in turn, stimulate the reproductive processes. With the reproductive processes stepped up, the layer eats more feed to keep in pace with her increased egg production.

**General Rules**

Here are some general rules for the use of artificial lights which may be helpful:

1. Group the birds in pens according to age—pullets together, older hens in another pen. If possible, some grouping should be done according to the condition of the birds.

2. A **MUST** is to keep an adequate supply of mash and water before the birds at all times that the lights are on.

3. Good body weight must be maintained if a winter molt and a consequent slump in production are to be avoided; feed grain liberally.

4. Be regular with the lights. You can’t turn them on at 4 one
morning, 6 the next and expect good results.

5. Artificial lights may be discontinued when the normal length of the day is about 13 hours. This will be around April 1 in Iowa. In normal times in Iowa the highest prices for eggs are during November and December when farmers get the fewest eggs. Whether price ceilings in these war times will change this picture temporarily remains to be seen, but it is probable that prices will be higher in the fall and early winter than in the spring months.

Though we have not done a great deal of experimental work here at the Iowa Station with artificial lights for layers, Ohio, Kansas, Oklahoma and New York, in particular, have done considerable, as have other stations. A study of this work shows other benefits from lights in addition to those listed above from the work at Oklahoma.

Other Benefits

Using lights in the late summer and early fall may help reduce the amount of winter molt among yearling and older hens. Lights may hasten the development of late-hatched and slow-maturing pullets.

Even “cull” pullets may be stimulated to produce well for a few months by the use of lights, and by culling out these birds when they stop laying they can be made to pay their way. By holding them off the early fall market, these cull pullets usually will bring a better price when sold.

Lights have a definite place in management of breeding stock, too. The late fall molt can be shortened by turning the lights on about the middle of December. This should bring the birds back into production by the middle of January—in time to produce hatching eggs.

We have said a lot of “nice” things about the benefits from using lights in the laying house, but you will be making a big mistake if you think that using lights on your layers will solve all your egg production problems. Using lights may actually result in fewer eggs unless the hens are fed, watered and managed properly.

Lighting Methods

There are about five different methods used for lighting the laying house: (1) Morning lights; (2) evening lights, (3) morning and evening lights; (4) evening lunch; (5) all-night lights.

When the days begin to shorten in the fall, a system may be used of turning the lights on long enough in the morning, in the evening or in both morning and evening to give the hens about a 13 or 14-hour day. The evening lunch plan is one in which the lights are turned on for about an hour between 8 and 9 o’clock each evening. The layers receive a feeding of grain in the troughs or hoppers at this time. Most of them will return to the roosts before the lights are turned off.

The use of morning lights seems to be the most popular. In order to give the hens a 13 or 14-hour day, lights need to be used in Iowa from about Oct. 1 to April 1. In order to insure that the lights will be turned on at the same time each morning, many poultymen use an alarm clock time switch.

Instructions and diagrams for making an alarm clock time switch and for installing lighting equipment may be obtained from the Agricultural Extension Service at Iowa State College.

How much light is needed? For morning or evening or morning and evening lights, use 40 to 50 watt bulbs with 14 to 16-inch reflectors, and provide one bulb and reflector for each 200 square feet of floor space. The lights are suspended above the floor so that the roosts are well lighted. The height of lights from the floor varies from 4 to 6 feet, depending on the type of roosts used. The feed hoppers and water vessels should be placed under the lights.

In the accompanying table is a schedule for turning on lights for Iowa, where only morning lights are used.

The all-night light plan has some things in its favor. The argument for this plan is that by using a dim light all night each bird has a chance to eat and drink at will at any hour of the day or night. Then, too, dim lights have a tendency to prevent crowding. With all-night lights, you turn them on with a switch in the evening and off in the morning at daylight, which saves the cost and trouble of installing timing equipment for turning on lights in the morning and dimming equipment for turning them off at night.

A 15, 20 or 25 watt bulb with a reflector for a 20 by 20 house is about right, according to some of the investigators. But other men advocate one bulb for each 200 square feet of floor space. The bulbs are usually located about 10 feet in front of the roost area and approximately 10 feet apart. When the bulbs are 4 to 6 feet from the floor, the light should reach the rear roosts so that birds can go to and from them without difficulty.

Place the feeding and drinking equipment under the lights. The all-night lights may be turned on Oct. 1 and off April 1 in Iowa, which will provide extra light until the daylight reaches approximately 13 hours. This method of lighting could be used by small flock owners without a great deal of cost for equipment.

With electricity available now on many Iowa farms, there is no reason why poultymen should not take advantage of getting higher egg production in the fall and early winter when prices are highest.

Better Oats Coming

Approximately 11,000 oat selections were grown at the Iowa Station, Ames, last year in search for strains with higher yields and greater rust resistance than the Tama, Boone and Marion varieties.

The new rust-resistant varieties, Boone, Marion and Tama, had an average yield of 51.5 bushels at Kanawha in comparison with an average yield of 38 bushels for three older varieties, Gopher, Richland (Iowa 105) and Iowa 103.