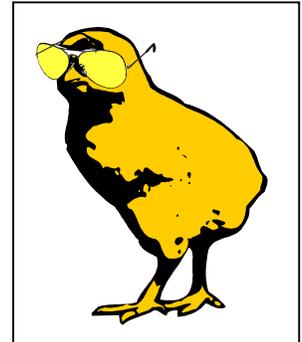


Lighting Program for Small Roaster Flocks



Turning the lights off is one of the best things that you can do for young meat-type chickens. By giving your birds short days and long nights from one to three weeks of age, you can help them to maintain a healthy body and rapid growth rate. Long dark periods help stimulate melatonin, vitamin D₃ and other hormone levels in the blood that improve the chick's immune system and tissue development. Limiting the hours of light will slow early growth slightly, allowing the birds to develop the strong hearts and bones needed to support rapid growth later in the flock. Turning the lights out when the birds are young produces benefits that can last the life of the flock.



Flocks given significant hours of dark from 7 to 21 days of age benefit from fewer health problems:

- **Leg problems** – The most dramatic effect of the lighting program is to reduce leg problems, especially twisted legs. The birds will be more active and spend more time walking.
- **Heat Problems** – Turning the lights off will reduce heart problems such as “flips” and ascites. The flips are large birds in good condition that die suddenly and are often found dead lying on their backs. Ascites is a form of heart failure that can lead to fluid build up in the abdomen and dark discolouration of the comb due to poor blood circulation. Lighting programs will reduce but not eliminate these heart problems. Feeding programs and barns temperature must also be properly managed if you want to minimize these health problems
- **Stunting** – Sometimes birds that are challenged by disease early in life will become stunted (noticeably smaller in size than their flock mates). In severe cases, the birds may not feather properly and retain much of their chick down. Research and farm experience suggests that a lighting program will help to combat this condition.

In general, all flocks benefit from lighting programs but farms where total mortality averages 5% or higher will benefit the most.

What Lighting Program is Recommended?

- 1) Provide 24 hours of bright light each day for the first 3 days after the chicks hatch.
- 2) Provide 18 to 23 hours of light (1 to 6 hours of darkness) each day from 4 to 6 days of age. The dark period should be provided in one large block, not in little periods of darkness throughout the day. The full 6 hours of darkness is preferred but even one hour of darkness will help the birds become accustomed to having the lights off.
- 3) Provide 8 hours of light and 16 hours of darkness each day from 7 to 21 days of age. The dark should be provided in one large block during the day or two large blocks split up by an hour of light. For example, you could turn the lights off at 5:00 p.m. in the afternoon and turn them back on at 9:00 a.m. the next morning. An example of breaking up the dark period would be to turn off the lights at 4:00 p.m., turn them on again for an hour at 10:00 p.m. and then leave them off until 9:00 a.m. the next day. The dark period should not be provided in small periods interspersed throughout the day.
- 4) At three weeks of age, provide the birds with 12 hours of light each day. From 4 weeks of age to market, provide 14 hours of light or natural daylight.



Frequently Asked Questions

- **Minimum hours of darkness?** – Roaster chickens will perform well over a wide range of lighting programs but a large block of darkness when the birds are young is critical. Sixteen hours darkness each day from 7 to 21 days of age is recommended.
- **Are the birds afraid of the dark?** – When you first start the lighting program, the chicks may cheep loudly for as long as 20 minutes after the lights are turned out. Within a week, however, they will be noticeably calmer at “lights out”.
- **Do you want the heat lamps turned off?** – No. The heat lamps do not produce enough light to interfere with the lighting program. If the lamps are the only source of light in the room, the birds will behave as if it is night time. One benefit of the heat lamps is that the birds seem calmer when you first start turning off the lights.
- **Will the birds crowd the feeders?** – When the lights first turn on, the birds are very active and will crowd the feeders and drinkers. Normally, the increased activity lasts for only about 15 minutes after the lights turn on and is normally not a significant problem. If bell drinkers are used, the chick may push down on the drinkers and prevent them from filling with water. Standing in your barn when the lights turn on will help you decide if you should be concerned.
- **Do I need fan hoods?** – Shutters and hoods over the fans are preferred but not essential. Experience indicates that the lighting program is still effective if there is some light leaking into the barn. The birds will sit close to areas where light enters the barn through the fans. Crowding has not been a problem but sometimes it may be necessary to remove caked litter from where the birds have been congregating.
- **What about windows?** – Windows can be a problem. If the pen has windows, look at the birds when the lights go out. Do they start to spend more time sitting and sleeping? Do they draw closer to the brooder lamps? If the birds do not react like it is night time, the glass needs to be covered.
- **Will the birds eat in the dark?** – Yes. While the birds are less active and eat less per hour, they can consume a large part of their daily feed intake in the dark. As they get older, their eyes adjust to the dark and they can eat more when the lights are out.
- **Can the dark period be broken up?** – Yes. When you have a very long dark period of 12 or more hours per day, you can break this up by turning the lights on for an hour or two at night. In hot weather, this mid-night break is recommended to give the birds the opportunity to eat and drink during the cool part of the day.
- **What if I need to work in the barn?** – Turn the lights on when you go in the barn and turn them off when you leave. Interrupting the dark period will not hurt the program.
- **What about Leghorns?** – Leghorns (egg-type chickens) do not have the same leg and heart problems as meat-type chickens. This lighting program is not designed for birds bred for egg production.

Summary

Turning the lights off when the birds are young will improve bird health from brooding age to market. A large block of 14 hours dark each day from 7 to 21 days of age is recommended.

Prepared by Animal Industry Branch, Manitoba Agriculture and Food

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