Aviagen™ Turkeys

Technical Bulletin

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# Successful Male Management - Lighting

Successfully managing male turkeys for semen production is largely dependent on three key areas: lighting, selection and weight control. This article details the techniques required for lighting breeder males.

Lighting is a major factor influencing the performance of the breeder candidate. A good lighting program may be the difference between profit or loss.

There are many variables that should be considered when developing a lighting program. What works with one type of housing, may not work with another type and what works at one latitude, may not necessarily work at another latitude. One must also consider age and reproductive maturity of the bird when implementing a lighting program.

## Guidelines for Developing a Lighting Program

Illustrated in Table 1 at the end of this bulletin is a male lighting program. However, it is impossible to recommend a lighting program that will work for all flocks in all geographic locations under all types of housing, climatic conditions and management systems. Therefore, we offer the following general guidelines which we have found useful in developing lighting programs.

These guidelines assume the turkeys are fit, of good health and are relatively close to the target weight curve.

**1. Males are capable of responding to very low light intensities.** In addition, there is evidence they can respond to somewhat shorter day lengths than hens. Thus, they can readily respond to morning and evening twilight as well as any light leaking into the barns. It is advisable to eliminate all light leaks.

**2. In a healthy, fit male, it takes approximately six to eight weeks for the testis to develop from a non-stimulated state to its full, active state.** For this reason, the male lighting program should start at least eight weeks before semen is needed. Males should be in semen production a minimum of two weeks prior to the first insemination to allow sufficient time for two pre-milkings.

**3. Once males have completed their last juvenile molt, gonadal development will occur any time they are exposed to 12 or more hours of light.**

**4. When implementing a lighting program, the current daylength to which the males are exposed should be considered.** For example, if the males are on more than 12 hours of light and have completed their last juvenile molt prior to commencement of the lighting program, they may already have initiated gonadal development.

If the lighting program has fewer hours of light than what the males are currently on, some males will respond to the decreased light negatively (i.e., the onset of semen production in these males will be delayed). Wattle and caruncular development, increased strutting, aggressiveness and gobbling are early signs that males are responding to light.

**5. Once light stimulation has been initiated, do not decrease the light.** This will have a negative effect on sexual development and delay the onset of semen production.

**6. Lighting patterns in the male barn should be uniform.** The lights should be placed so shadows in the pens are minimized.

**7. Control fed males do better on a higher light intensity than full fed males.** Control fed males should have 10 foot candles (100 lux) or more. Full fed males do well on lower light intensities - 2-3 foot candles (20-30 lux).

**8. Weekly weighing and evaluation of strutting, gobbling and phallus development is an integral part of breeder male management.** If the males are behind schedule in sexual development, it may be advisable to give them more light and/or feed. Sexual maturity is influenced by both light and body weight.

If the males are full fed and below the target body weight, it will be necessary to keep them on a higher nutrient diet until they catch up to the target weight, then lower the protein level. If the males are control fed and below the target body weight, the daily feed allotment should be increased.

**Table 1**

**Aviagen Turkeys, Inc.**
**Suggested Light Schedule for *Control* Fed Breeder Males**

| Period | Open Housing* | Light Controlled Housing | Minimum Intensity |
|---|---|---|---|
| Hatch to Selection (16-19 weeks) | Ambient Light | 10L:14D | 10 foot candle (100 lux) |
| selection to the end of production | Ambient + artificial light to maintain at least a 14L:10D daylength or longest natural daylength between selection and the end of production. Lights should not be decreased at any time in daylength or intensity. | A constant 14L:10D** or a gradual increase to a maximum daylength of 16L:8D by the end of production. If the toms appear to be behind in development, increase lights by one hour. | 10 foot candle (100 lux) |

* Artificial light provided must be at least 10 foot candle. (100 lux)

** When moving toms from open housing to light controlled housing, the artificial daylength must be equal to or longer than the ambient daylength.