

# info

## Management of Lighting for Turkey Breeders

Understanding and management of the lighting environment is essential for the year round consistent production of quality eggs and semen. Ensuring that the hen or tom is on the *correct* lighting program (duration and intensity) is one of the details often overlooked by breeder managers: that is until a drop in egg production occurs or toms begin to molt. This fact sheet will outline some of the reasons why lighting is critical to breeder performance and will point out areas where mistakes have commonly occurred.

Optimal reproductive performance is dependent on:

- hormone levels which are stimulated and controlled by light duration and intensity
- physical maturity of the bird. Hens lit prior to 30 weeks of age will have a higher incidence of small eggs and cloacal prolapses (“blowouts”).

Estimating light intensity is difficult for people to do but easily accomplished by the turkey. In order for birds to perceive a change in light intensity, the darkest spot in the barn - when the lights are on - should be at least 10 times as great as when the lights are off.

All measurements should be taken at bird eye level with a light meter. Remember that the intensity from a light bulb decreases with age

or dust buildup in the barn.

### Light Management of Hens

#### *Conditioning*

Light restriction to 6 hours per day is used to prime the hens to respond to stimulatory light at the time when they are scheduled to come into production. Table 1 shows two lighting schedules for flocks lit between August-October and November-July. The following are essential criteria for successful lighting programs:

- It is important to provide sufficient and even light intensity during the conditioning period to promote activity. This is especially important during the “dark-out” period when birds do not have many hours in a day to exercise.
- Ensure that there are no light leaks.
- During times of heat stress, lights should be left on longer to prevent the heat build up when birds bed down and huddle close to each other. For example, schedule one (Table 1) changes the duration of light slower and provides for a longer period of time to have the curtains open during the warmest part of the year.

#### *Production*

- Light duration is increased to 14 hours to

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stimulate egg production. Adequate, even lighting throughout the barn will enhance bird activity, egg production and help prevent floor layers.

- Day length must **never** be decreased during the production period. This is critical in open-sided barns after June 21<sup>st</sup> when the natural day length will begin to

decrease.

- Always add any additional light in the morning.
- Never force hens to hold their eggs longer than 4 hours from the time the lights come on to the time the nests are open.

**Table 1. Lighting Schedule for Breeder Hens - Northern Hemisphere**

Age in Days	Age in Weeks	SCHEDULE #1		SCHEDULE #2		Min. Light Intensity	
		Light Duration (flocks lit from Aug-Oct)		Light Duration (flocks lit from Nov-July)		Lux	Foot Candle
		Hrs/day	From/To	Hrs/day	From/To		
1		24		24		70	7
2-4		23	1 hour off	23	1 hour off	70	7
4-119	1-17	14 or natural	5:00-19:00	14 or natural	5:00-19:00	50	5
120-133	17-19	10	7:00-17:00	8	8:00-16:00	50	5
134-147	19-21	9	8:00-17:00	8	8:00-16:00	50	5
148-161	21-23	8	8:00-16:00	7	9:00-16:00	50	5
162-175	23-27	7	9:00-16:00	7	9:00-16:00	50	5
176-210	27-30	6 (reduce to 5 if necessary)	9:00-15:00	6 (reduce to 5 if necessary)	9:00-15:00	50	5
210-peak production	30-36	14 or natural	4:00-18:00	14 or natural	4:00-18:00	100	10
252-end		15 or natural	3:00-18:00	15 or natural	3:00-18:00	100	10

**Table 2. Lighting Schedule for Breeder Hens - Southern Hemisphere**

Age in Days	Age in Weeks	SCHEDULE #1		SCHEDULE #2		Min. Light Intensity	
		Light Duration (flocks lit from Feb-Apr)		Light Duration (flocks lit from May-Jan)		Lux	Foot Candle
		Hrs/day	From/To	Hrs/day	From/To		
1		24		24		70	7
2-4		23	1 hour off	23	1 hour off	70	7
4-119	1-17	14 or natural	5:00-19:00	14 or natural	5:00-19:00	50	5
120-133	17-19	10	7:00-17:00	8	8:00-16:00	50	5
134-147	19-21	9	8:00-17:00	8	8:00-16:00	50	5
148-161	21-23	8	8:00-16:00	7	9:00-16:00	50	5
162-175	23-27	7	9:00-16:00	7	9:00-16:00	50	5
176-210	27-30	6 (reduce to 5 if necessary)	9:00-15:00	6 (reduce to 5 if necessary)	9:00-15:00	50	5
210-peak production	30-36	14 or natural	4:00-18:00	14 or natural	4:00-18:00	100	10
252-end		15 or natural	3:00-18:00	15 or natural	3:00-18:00	100	10

## Light Management of Toms

### *Conditioning*

Toms do not require exposure to short day lengths prior to photo stimulation to come into semen production. Exposing toms to 14 to 16 hours of light per day will result in high quality semen production. However it does take the tom longer to develop sexual maturity than the hen. Therefore it is critical that all toms be photo- stimulated at least 4 to 6 weeks prior to the lighting of the hens and pre-milked twice to ensure semen is present. Excessive light intensity can contribute to increased aggressiveness in toms and result in mortality.

### *Production*

- If the tom pen/barn is light tight, then the toms can stay on 14 hours of light from week 24 forward.
- If the pen/barn is not light tight then add 15 minutes/week or 30 minutes every 2

weeks starting at week 30 when the natural daylength begins to shorten. Do not exceed 18 hours of light total.

- Toms like hens require a constant even light intensity within the barn. Burnt out light bulbs can cause toms to go out of production.
- All measurements of light must be taken at bird eye-level with a light meter.
- Toms housed in curtain sided buildings must have natural day length, which may not be reduced when days get shorter. Toms must get a minimum of 14 hours of light.
- Never decrease light duration or light intensity to semen producing toms.

Lighting recommendations will vary due to geographical locations, time of year and type of housing being used. Consult with Hybrid's Technical Team for more specific recommendations.

**Table 3. Lighting Schedule for Breeder Toms**

Age in Days	Age in Weeks	Total Hours	From/To	Min. Light Intensity	
				Lux	Foot Candle
1		24		70	7
2-4		23	1 hour off	70	7
4-140	1-20	12	6:00-18:00	40	4
140-168	20-24	13	5:00-18:00	40	4
168-end	24-end	14	4:00-18:00	30	3

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