

Date: February 24, 2015

Goal of new lighting system: Bright high-intense white ‘natural’ light-to-dark Delta^{fc} of >15 may be used to migrate birds, upon demand, within at least 10 feet of the birds visual sight. Practically, this behavioral system will be employed to increase water and feed consumption, upon demand, to create a ‘meal-feeding’ program. Bright ‘natural’ light on BOTH feeders and watering areas will be employed to encourage water consumption post-placement and then feed consumption in later ages.

Lighting Products: AviLighting™ Feeder Lights- placed over feeders.
 AviLighting™ Water Lights- placed underneath water lines and close to water troughs (if applicable) over starting trays/paper feeders.
 Initial 2-day post-placement ONLY.

Lighting Schedule (suggested):

Day of age ^{1,2}	Ceiling House Lights	AviLighting™ Feeder Light ^{3,4}	AviLighting™ Water Light ³	Light Intensity (bird head height) ⁸
Placement-2 days (initial 48-hr) ⁹	OFF	OFF	ON (24-hr)	>15 fc (Waterer)
3-4 days (49-hr to 4-days)	OFF	ON (4hr alternating ⁵)	ON (4hr alternating ⁵)	>15 fc (Feeder) >15 fc (Waterer)
5-7 days	OFF	ON (24-hr)	OFF	4-5 fc (Waterer)
8-14 days	OFF	ON (24-hr)	OFF	>3 fc (Waterer)
15-21 days	OFF	ON (24-hr)	OFF	>2 fc (Waterer)
22 days to 7-days prior to market (BLUE lights may be substituted for DARK periods). ⁶	OFF	ON (15-20 of 24 hours daily). ⁷	OFF	>0.10 fc Waterer (acceptable range = 0.10 to 1 fc)
7-days prior to harvest. ⁶ (if applicable)	ON (if available)	ON (24-hr)	ON (24-hr)	4-5 fc (Waterer)

¹ Lighting regime should be changed in early am (prior to 9 am) to avoid daily 24-hr diurnal disruption.

² Where possible within the controller restraints, light intensity should be changed over a 6-hr period.

³ Feeder and Water Lights should be placed outside of direct infrared heat transmission.

⁴ The 2nd feeder line lights will be turned on, with same light intensity requirements, after birds are moved from brooding to growout areas (or are roaming to a point, that other feeder lights are essential, for the birds to find the feeders and watering areas).

⁵ AviLighting Feeder Lights and Water Lights should alternate 4-hr each continuously over the initial 2-day period.

⁶ BLUE lights may be substituted for DARK periods.

⁷ COMPLETE DARKNESS or COMPLETE BLUE lights may be shown 4-9 hours daily, schedule to be set by the Poultry Integrator Technical Team.

⁸ Lighting dimming schedule suggestion is to dim over at minimum a 6-hr period.

⁹ BOTH feed (both underneath waters in trays or on paper and in normal pan auger feeding system) and water will be offered.

Expected Results:

1. When birds are offered BOTH feed (placed directly underneath nipple/trough water lines or trough, as well as, in regular auger feed pans) and water, birds will initiate drinking quicker (and shortly after placement), more often and appears to be in the total bird population (except for the injured or weak birds).
2. Within 48-hr post-placement, birds will begin to wonder out to auger feed pans and other lite areas.
3. Research has shown that fresh dehydrated and weak flocks that has recently arrived from the hatchery, will especially benefit from these procedures and products.
4. Body weight uniformity, within flock variation, is expected to be improved, resulting in higher average body weight gains and reaching sexual maturity (if applicable) more consistently.

James L. McNaughton, Ph.D.
Chief Scientific Officer
AHPharma Energy Systems, Inc.