

Nov. 13th, 2009

Auburn University – Field lighting test results

The following test results cover data taken from several 40' by 400' broiler houses. Several things to note:

- a.) All dimmable CFL's were operated at full light output for a minimum of 24 hours.
- b.) All keyless sockets were changed out using new EPCO nickel plated brass screw shell models.
- c.) All dimmers were verified to be models that were designed to handle dimmable CFL's.
- d.) Retrolite 2L adapters were used to focus light at the feeder area and to make sure that 4 foot candles could be reached to guarantee growers premium pay. The additional light level also allows the 3 foot candle minimum to be maintained even if slightly dirty or as lamps depreciate with age.
- e.) All Non Dimmable CFL's used in the 2L adapters were switched off prior to dimming.

Test house # 1 - (whole house brooding) – quantity of 42 of the Retrolite 2L adapters w/ 1 – 15 watt Retrolite dimmable CFL and 1 – 18 watt non dimmable Overdrive CFL. All lighting was directly above the 2 feed lines on 20' centers. All lighting was controlled by a modified Hired Hand – Evolution dimmer.

Test House # 2 – (half house brooding) - quantity of 22 of the Retrolite 2L adapters w/1 – 15 watt Retrolite dimmable CFL and 1/18 watt non dimmable Overdrive CFL. The remaining 20 lights were the Retrolite 15 watt dimmable CFL's directly plugged into the new EPCO keyless ceiling sockets. All lighting was directly above the 2 feed lines on 20' centers. All lighting was controlled by a Protech 4.8K dimmer. This dimmer did not require any factory modifications.

Comparison House # 3 – This house was used as a data comparison house. This house used 8 watt cold cathode lamps in all 42 – lighting sockets which were directly above the 2 feed lines on 20' centers. A 3rd center row of 10 - 55 watt non dimmable CFL's was used in the brood section to achieve the 3 foot candle minimum. Several comments:

1. The 3rd row of 55 watt non dim CFL's was needed to reach the 3 foot candle level. As lamps age or get dirty this light level will decrease. The premium pay, at that time, may be in jeopardy.
2. **It is our opinion that the 3rd row of 55 watt lights floods the center of the house with extra light but this additional light would be better used in directing over the feed lines. This is another reason for the 2L adapter use.**

Comparison House # 4 – This house used all 100 watt regular incandescents in their 42 keyless sockets along with a center 3rd row of brood lights also using 100 watt light bulbs.

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	<u>Test House #1</u>	<u>Test House #2</u>	<u>Test House #3</u>	<u>Test House #4</u>
KW-Hr used	566	288	602	1366
Foot candles at floor level under keyless during brood	4.5 - 5.5	4.5 - 5.5	3	
Lamp failures during test	0	2	n/a	n/a
Dimmable foot candle level achieved	0.05	0.05	0.05	n/a
General return on investment	2 flocks	2 flocks	n/a	n/a

OBJECTIVES & RESULTS:

1. The 2L adapter allowed for best foot candle levels without a 3rd or center row. **It is the opinion of the field testing team that by having the light directed to the feeders (using the 2L) that this is a major factor in the increased bird weight.**
2. Test house # 2 is the typical ½ house brood layout which shows absolute minimum kilowatt usage (288). This represents a 79% reduction.
3. Test houses 1 & 2 showed a .04 and .05 bird weight increase.
4. Although the ROI (return on investment) will change based on electricity costs....**typically 2 flocks or less will pay for the Retrolite 2L adapter, dimming and NON dimming CFL's and updating the keyless sockets to the nickel plated models.**