How To Dim or How Not To Dim, That Is The Question

Many dimmable LED lights in poultry houses have failed before their life expectancy, and some LEDs continue to lose brightness much more quickly than expected. What is happening in poultry house dimmable lighting is similar to what has happened in many other industrial applications, with all major LED bulb manufacturers.

Some of the reasons for these LED premature failures and excessive lumen depreciation (light loss) are:

1. **LED bulb incompatibility with installed dimmer**. Lighting technology has changed rapidly over the last 7 years. Incandescent, to CFL, to LED. Many existing installed dimmers are using technology that is not compatible with the newest most efficient LED designs. In the industrial and commercial lighting industry, bulb manufactures are listing dimmers and dimmer technologies that are and are not compatible with their bulb. ALL DIMMERS WILL NOT WORK WELL WITH ALL BULBS. MANY OLDER TECHNOLOGY DIMMERS CAN CAUSE BULB FAILURE. Take steps to find out if the bulbs you are using are compatible with your dimmer, and if not, replace the dimmer.
2. **Make sure your dimmer uses up to date dimming technology**. Early dimmers utilized a dimming technology call Leading Edge dimming. Leading Edge dimmers cause an inrush of current that many times is greater than modern LED chips are designed to handle. This occurs 60 times per second and each time it adds stress and damage to the LED chips. Inrush current on Trailing Edge dimmers is greatly reduced and rarely stresses the LED chips. Leading Edge dimmers are easier and less costly to manufacture. While most traditional poultry house dimmers are of the Leading Edge design, a few newer Trailing Edge models are now available. By far, the best dimming technology for modern energy efficient LED's used in poultry houses is trailing edge dimming technology.
3. **All dimmers are not equal**. Some dimmers which were designed for dimming incandescent, fluorescent, cold cathode, compact fluorescent, or halogen do not treat modern LEDs so well. An abundance of reports from the industry over the past few years has repeatedly shown that improper dimmer technology accelerates these premature failures and lumen depreciation in LEDs.
4. **Inferior wiring and keyless sockets**. Many observations of poor wiring and corroded sockets have been common findings in poultry houses. An electrical checkup by a certified electrician and replacement of any defective or corroded sockets should be undertaken before installing new LEDs.
5. **Dimming outside the LED's designed range**. Many poultry producers are attempting to dim to extremely low light levels, sometimes well below the acceptable range of the best LEDs on the market. This is quite common for most inexpensive omni-directional LEDs (like those purchased at big box stores), which were designed for light duty use in homes, and not designed for the very low dimming levels desired in many poultry houses.

Check out the technical data and reports from the lighting industry to better understand what is happening:

http:www.aglights.com/watts_new/April_2020_newsletter