



# HOW TO CREATE AN IDEAL POULTRY HOUSE ENVIRONMENT FOR OPTIMAL BIRD HEALTH

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GETTING THE HIGHEST FEED CONVERSION EFFICIENCY FROM A FLOCK CAN BE TOUGH.

There are plenty of things outside of your control when it comes to being a poultry producer, but creating the ideal environment so that birds remain healthy and feed efficient doesn't have to be one of them.

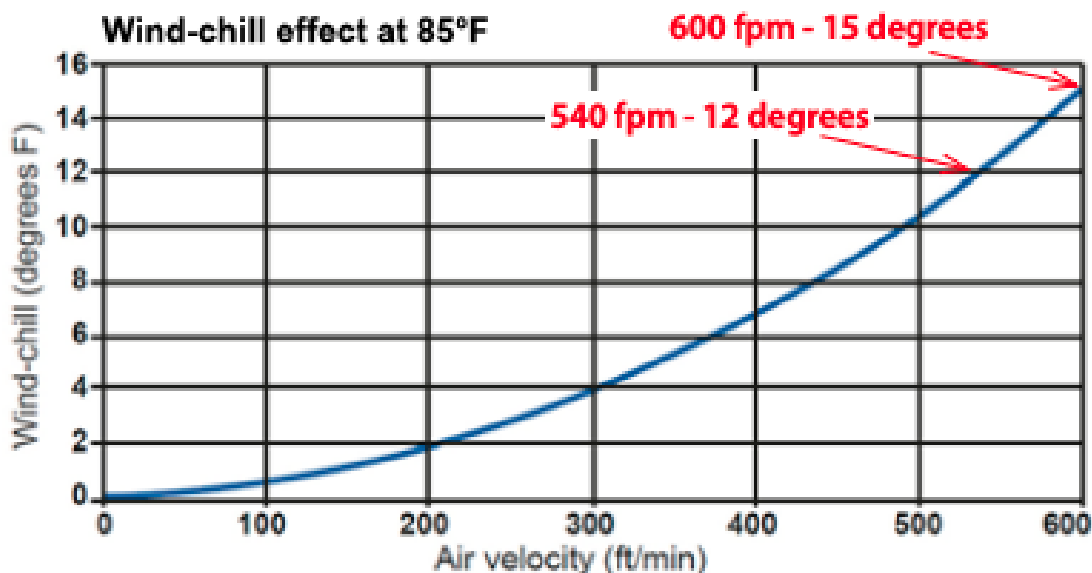
Creating the ideal bird environment for optimal bird health in your poultry houses is important, and there are several factors, like ventilation, feeders and waterers, and lighting, that can have a direct impact on the success of an operation like yours.



## VENTILATION

The amount and speed of air running through a chicken house in tunnel ventilation can make a big difference in bird productivity. The following graph shows approximate wind chill cooling for birds above 5lbs in 85 degrees. At higher velocities, a 10 percent drop in air velocity, in this case from 600 fpm to 540 fpm, reduces wind chill cooling from 15-12 degrees.<sup>1</sup>





Air velocity can be directly tied to weight gain as well. In this case study, male broilers were raised from three to seven weeks in still air, 400fpm air and 600fpm air, with controlled temps of 77 degrees at night and 86 degrees during the day. At these temps, air velocity alone was enough to show a production increase and economic return.<sup>1</sup>

**Air Velocity = Weight Gain**

		Week 4	Week 5	Week 6	Week 7
		-----Body Weight Lbs-----			
Air Velocity (fpm)	0	2.96	4.24	5.32	6.10
	400	3.00	4.44	5.81	6.92
	600	3.02	4.49	5.92	7.22

$7.22 - 6.92 = 0.3$  lbs more weight per bird at 600 fpm. In a 20,000-bird house,  
 $0.3 \text{ lbs} \times 20,000 \times \$0.05 = \$300.00$

## FEEDERS

Presentation, flow and accessibility are what predict the success of a pan feeder. Birds like to look at their feed, and they want it to look as good as it tastes, which means feeders should be clean and water should be fresh. Having feed readily available also encourages birds to eat at their own pace, so select a feeder pan with consistent flow.

For accessibility, feeders and waterers should be level with the bird's back, in order to limit spillage and waste. Much like us, birds aren't interested in eating what falls on the floor.

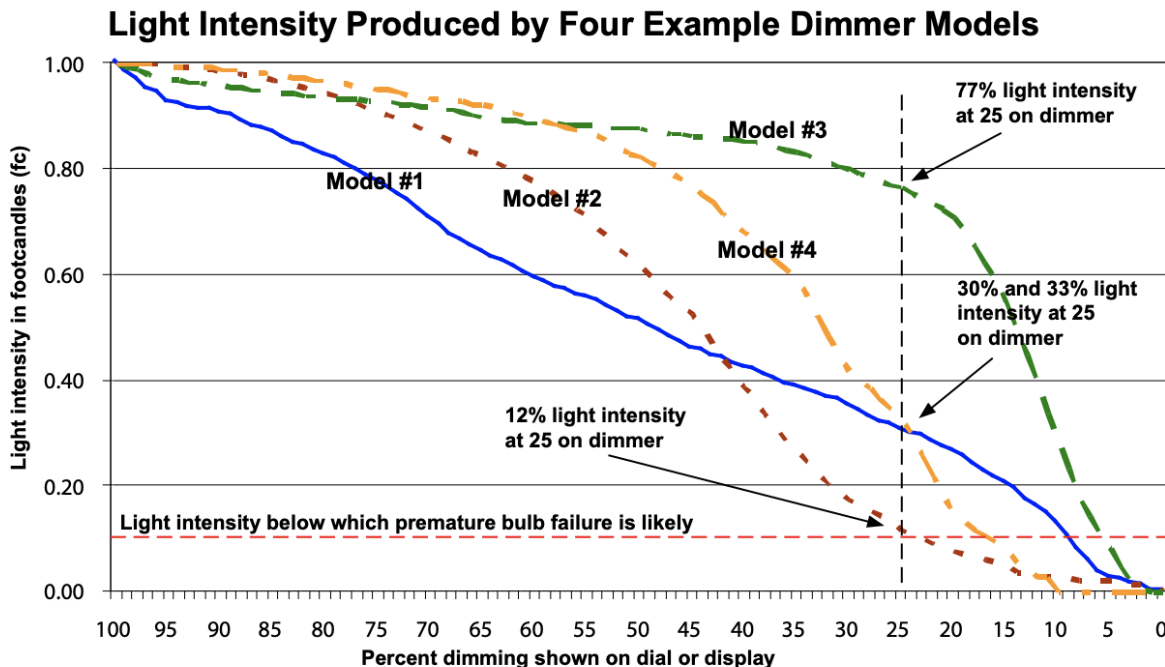
## LIGHTING

Lighting also has a direct correlation to bird growth rate. Light intensity, spectrum and duration all play a role in how productive birds will be.

Having a quality poultry barn dimmer is important to adjusting lighting. The key things to look for are:

- Smoothly increases and decreases intensity
- Limits the flicker that can agitate chickens
- Accepts a variety of bulbs

Not all dimmers are created equal. The table below shows how four different dimmers responded to the same dial settings.<sup>2</sup>



Spectrum of lighting also makes a difference, because birds have excellent eyesight and can see more colors on the spectrum than humans. Use a meter to ensure that your poultry barn lighting truly matches up to what you've set it to be. When you walk into a barn you may see one thing, but the birds might see something totally different.



## WHAT'S THE BEST LIGHTING PLAN FOR YOUR POULTRY BARN?

Every extension specialist, lighting company, dimmer brand and integrator may have a slightly different idea about what makes the best lighting for optimal bird health. The key is to find the one that works best for your farm and birds.

Knowing how each of your barn systems can impact production will improve your ability to make the right choices for your operation. The team at Cumberland can help you set your barns up for success.



## LEARN MORE ABOUT CUMBERLAND

Contact your local Cumberland dealer for more information on the technology and support that can help you take poultry production to the next level.

1 [6 Top Tips for Best Tunnel Cooling](#), National Poultry Technology Center

2 [Poultry House Light Dimming Issues](#), National Poultry Technology Center

Charts and graphs pulled from data from the national Poultry Technology Center