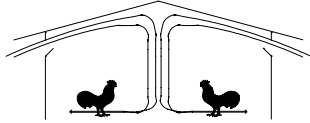




The University of Georgia

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College of Agricultural and Environmental Sciences



Poultry Housing Tips

Air Temperature/ Speed Meter

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Poultry producers are generally well acquainted with the importance of maintaining the proper house air temperature throughout the life of the flock. If young chicks are kept too cold, they will not get off to a good start resulting in increased early mortality as well as decreased weights at the end of the grow out. Keeping older birds too cold will result in poor feed conversions. By far the most costly situation when it comes to controlling house temperature is allowing older birds to become too warm, resulting in decreased weight gains, increased feed conversions, and possibly increased mortality.

One environmental factor that producers are quickly learning the importance of is air movement. During the summer months air movement is crucial in order to keep heat stress related problems to a minimum. A wind speed of 400 - 500 ft/min flowing over large birds can produce a wind chill effect of ten to twelve degrees, insure that trapped heat between the birds is kept to a minimum, keep the temperature rise as the air moves from the pad to the fans in a tunnel-ventilated house to less than five degrees, as well as help minimize the harmful effects of high humidity. Factors such as the number of fans operating, evaporative cooling pad and fan maintenance can affect the amount of wind speed a producer has to work with and therefore the amount of cooling available. Furthermore, the amount of air speed birds require changes over the course of a flock, i.e., young birds need less air speed for cooling than older birds.

During cold weather wind speed should be controlled to insure that the same wind-chill effect that is beneficial to the birds during hot weather is not harming them during cold weather. For instance, young chicks are very susceptible to drafts and air speed at floor level should ideally be kept to 50 ft/min or less even if the desired air temperature is 85°F or warmer. A house air temperature of 70°F with large birds during cold weather is great, but air blowing



Putting Knowledge to Work

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over birds at a couple of hundred feet per minute can make them feel as if temperatures are in the sixties leading to excessive feed consumption.

Though many producers now realize the importance of both air temperature and wind speed to their bottom line, very few are actually doing a proper job of monitoring either. Air temperature is often measured using large dial thermometers of questionable accuracy and the practice of producers measuring wind speed is practically nonexistent. But, there is a new product on the market that may help change this situation.

This product, the Kestral 2000, is a pocket sized device that measures both wind speed and temperature. It has a temperature measuring accuracy of approximately +/- 1.5 degrees, and though not ideal, this accuracy is better than most large dial thermometers. This device also has a wind speed measuring capability accurate to +/- 3%. One of the big advantages of this device over other air velocity meters is that not only will the unit provide a grower with the wind speed at any given moment, it will also provide the maximum, minimum, as well as the average air speed from the time the unit was activated. This is a very important feature considering the wind speed in a house can vary significantly from moment to moment. A grower could measure the air speed in one location for about a minute and get the average, maximum and minimum air speeds as well as the air temperature, then turn it off, move to another location, hold it at arms length, turn it back on and make another set of measurements. By repeating this process in different locations in the house a very accurate overall picture of air temperature and wind speed can be obtained.

One word of caution the Kestral 2000 will also measure the “human” wind-chill effect. This is very different than the “chicken” wind chill effect and as a result should not be used to determine the effective air temperature in a poultry house.

The Kestral 2000 costs approximately \$119. This may seem like a lot, but considering the importance of air movement in keeping birds cool during hot weather, it is well worth the investment. With an air velocity meter you can determine the effect dirty shutters, loose fan belts, or clogged evaporative cooling pads have on wind speed and therefore cooling. You can check the air speed at a number of locations then clean your fans or wash your pads and check the air speed again to see what you have gained. Used in combination with wind-chill charts developed for broilers you can determine the effective temperature for different age birds with different wind speeds to see if you are possibly using too many fans thereby increasing electricity usage.

If the \$119 is more than you want to spend you may want to consider the Kestral 1000 which costs approximately \$89. The only difference is the Kestral 1000 does not measure air temperature.

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Provided to you by

Kestral 2000 and 1000 are Manufactured by Nielsen-Kellerman (610) 447-1555. Kestral 2000 (Catalog No. KL008102) and the Kestral 1000 (Catalog No. KL008100) can be purchased from Davis Instruments at 1 800 368-2516

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