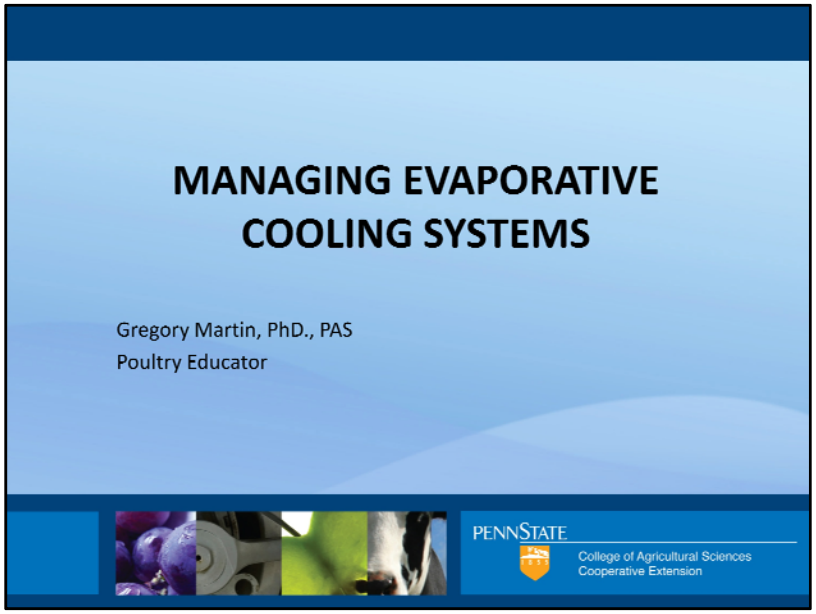
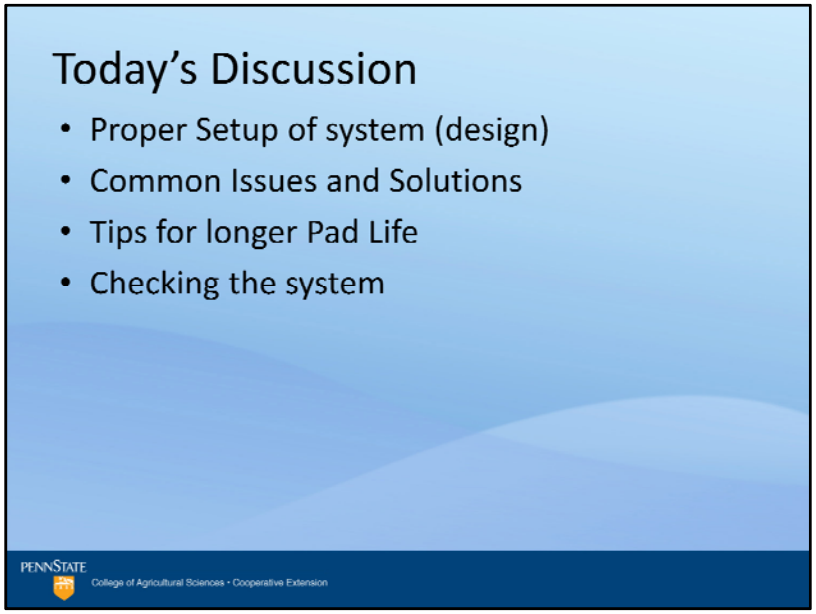
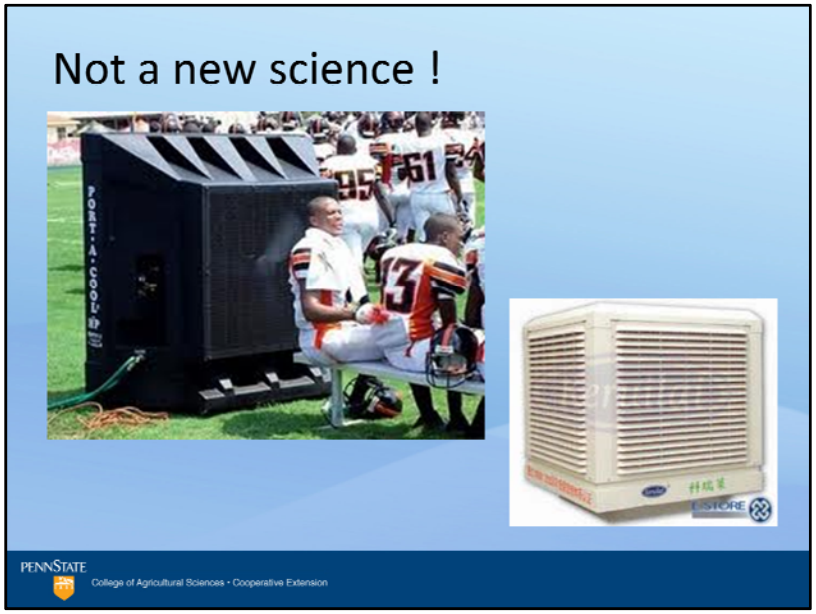


I am a poultry educator for the Penn State University, headquartered in Lancaster County.

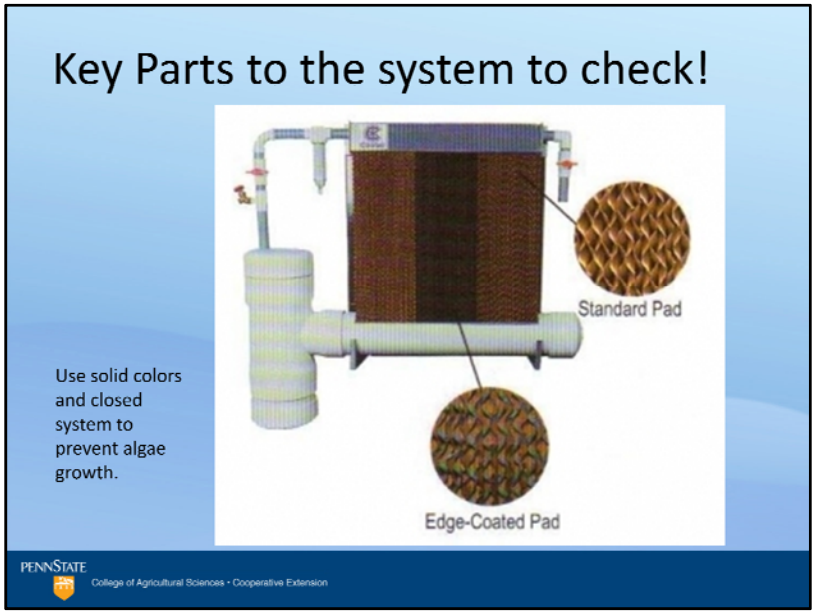


Today, I will be speaking regarding the efficient running of cool cells in broiler housing

I would like to acknowledge these extension educators who have published information on this subject.

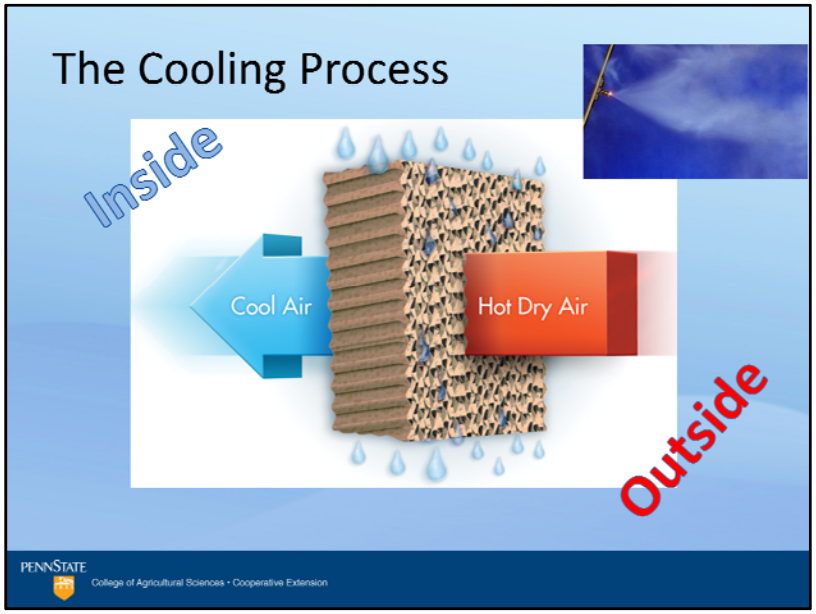


Evaporative cooling is not new. In the west, it is used as a whole-house cooling appliance. In areas of high humidity this will not work.

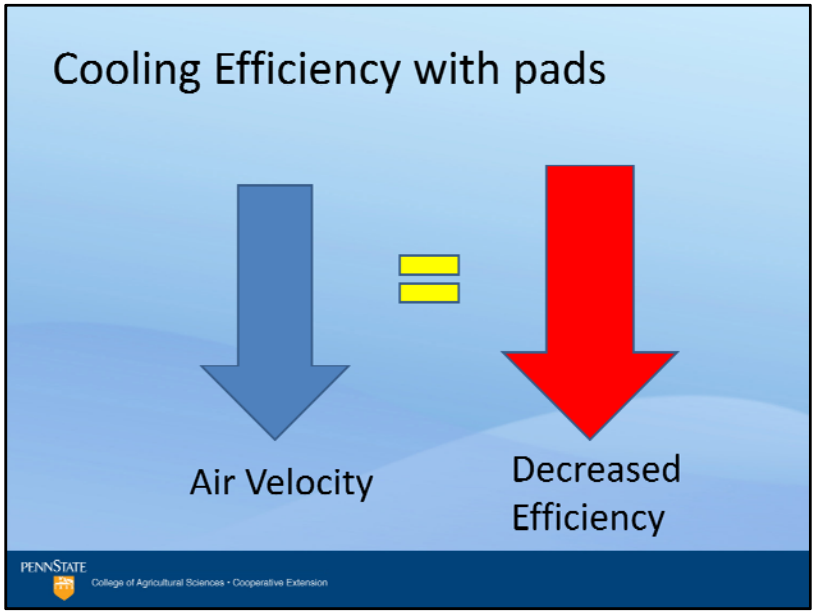


This is a diagram of the major components of a cool cell system. Be sure to plumb in T-couplers into the top so that you can run a brush through to helps clean the unit. Plastic colors that block sunlight also helps reduce algae growth. Filters help keep the water free of materials that would block the tops of the cells.

Coating on the edge of the cell helps keep the cell open and helps reduce algae growth.

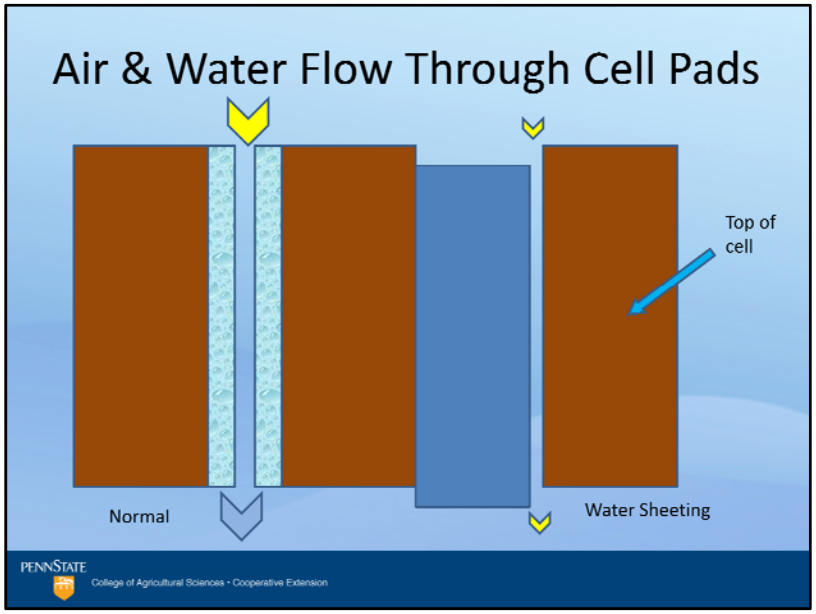


The cooling process uses the specific heat of water and removes all heat energy leaving cool air behind. This is an efficient system as long as it is not too humid.

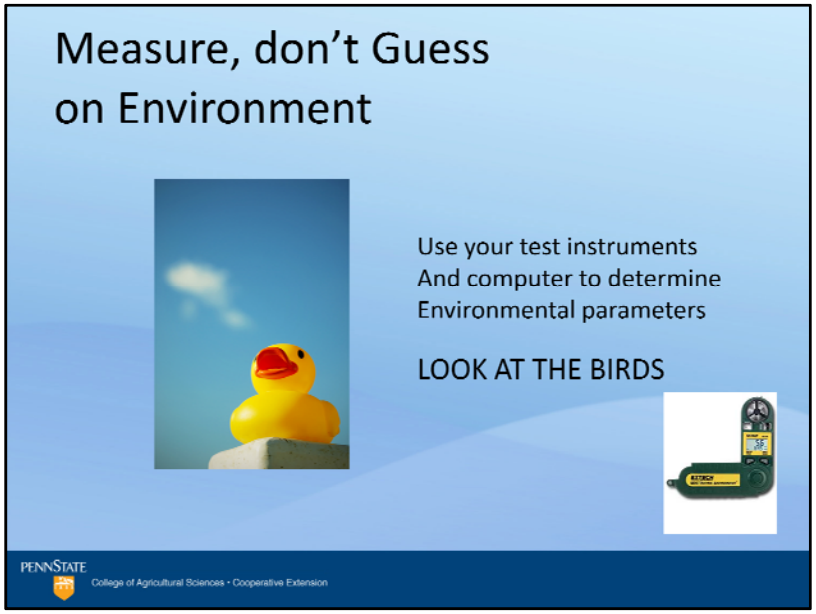


One of the critical things to remember is that as you drop air velocity through the pad you get a decreased efficiency in cooling. Dust, algae, feathers and other things that plug a cell will reduce air flow through the system. Keeping the system clear helps maintain efficiency.

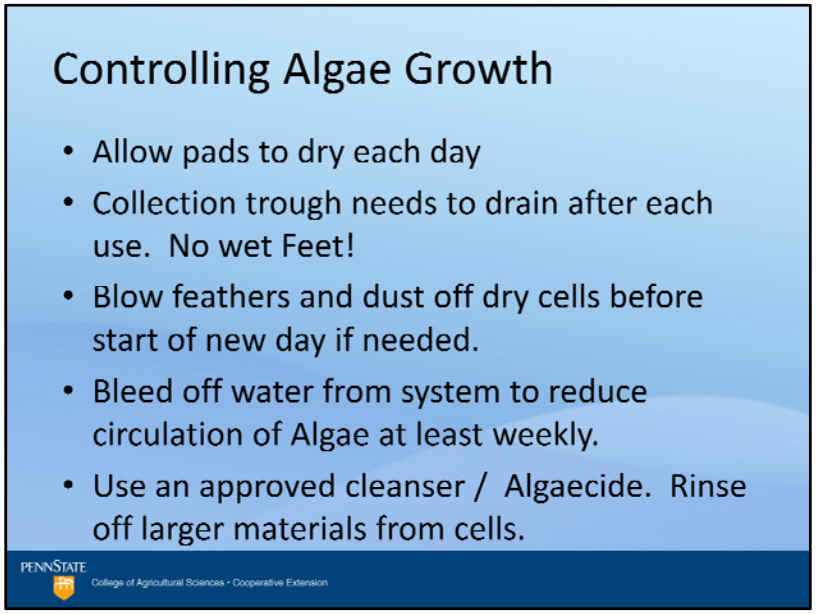
Streaking is where water does not wet the entire surface of the cells. Be sure to in-clog the upper spreader and ensure there is adequate flow to the top of the cell.



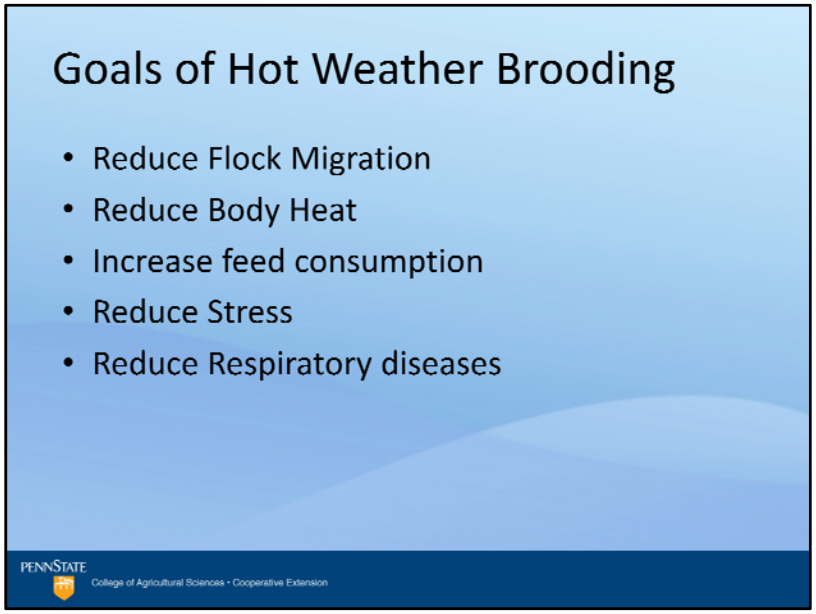
Proper air flow is helped by just providing enough water to keep the cells wet. Too much water can cause what I call "Water Sheeting" that blocks air flow and can cause wet spots in the house. The water fills the space where air was to flow.



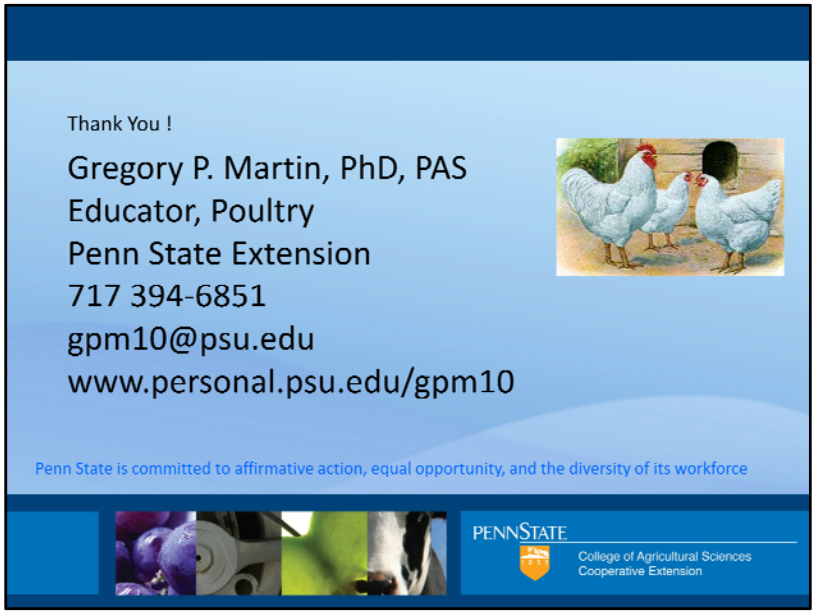
It is always a great idea to measure how effective your systems are running. There are inexpensive instruments that can help measure conditions that will aid in making your system efficient. If you don't have these instruments, look at the birds and they will show you via their behavior how things are going within your house. Migration towards the cool cell end of the house means that their immediate area is getting too warm. Correct for these as needed.



Cleaning materials best suited for this include quaternary ammonia in concentrations for this type of system. Be sure to only use materials approved for your cells, as acid based chemicals may cause de-lamination of the cool cell material. You can hose down dirt and algae from cells but do not use high pressure as that will tear the edges of the cool cell creating a larger problem.



When cool cells work, we can achieve our goals of brooding in hot weather.



Thank you for the opportunity to speak to you today. Please visit my website listed above for a copy of this information.