

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

Today's Discussion

- Proper Setup of system (design)
- Common Issues and Solutions
- Tips for longer Pad Life
- Checking the system

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

Acknowledgements

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 - Jess Campbell
- University of Georgia
 - Michael Czarick
- University of Missouri
 - Joe Zulovich

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

Not a new science !

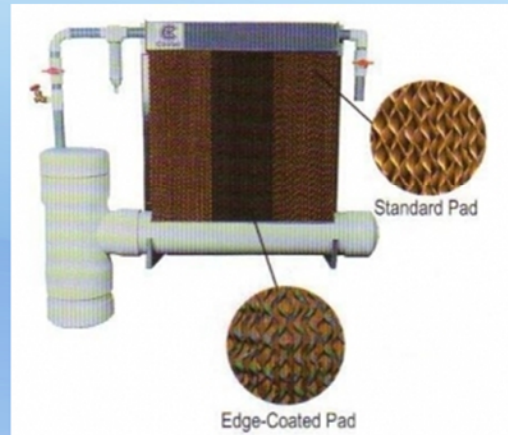


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Evaporative cooling is not new. In the west, it is used as a whole-house cooling appliance. In areas of high humidity this will not work.

Key Parts to the system to check!

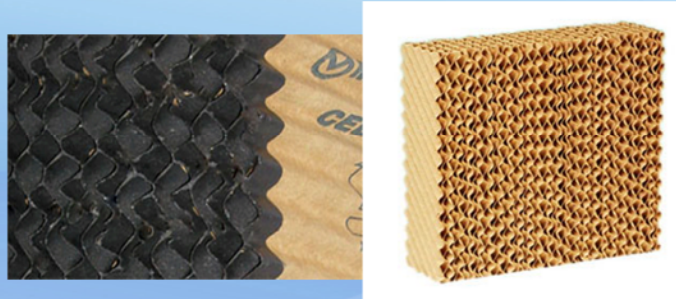
Use solid colors
and closed
system to
prevent algae
growth.



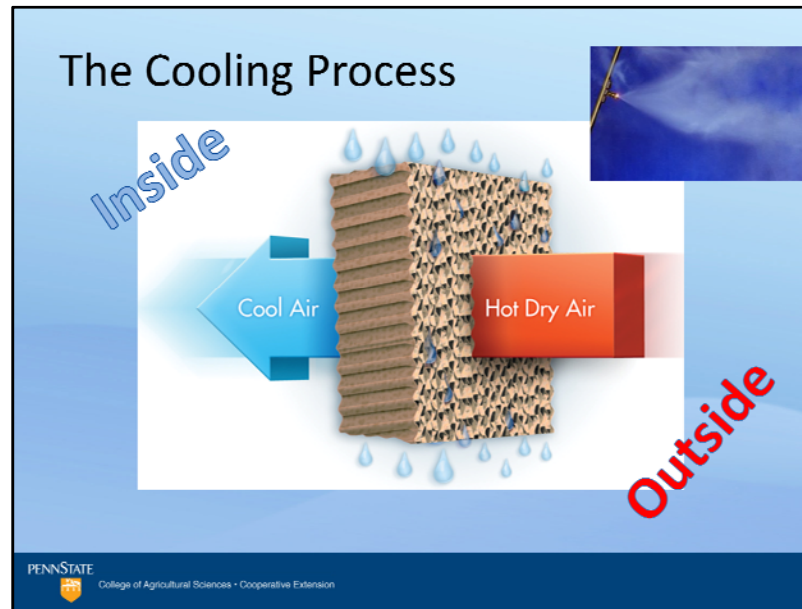
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This is a diagram of the major components of a cool cell system. Be sure to plumb in T-couplers into the top so that you can run a brush through to help clean the unit. Plastic colors that block sunlight also help reduce algae growth. Filters help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

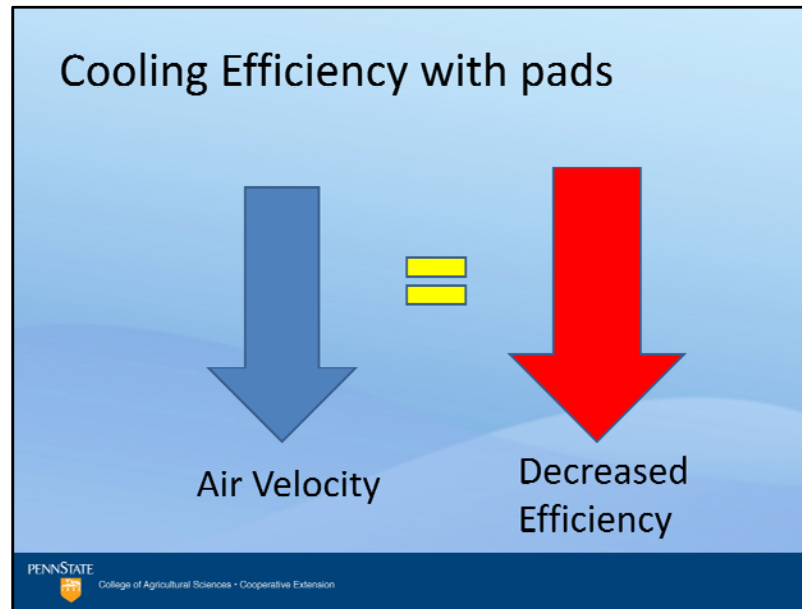
Coated Cel Pads - Collapse / Algae Prevention



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.



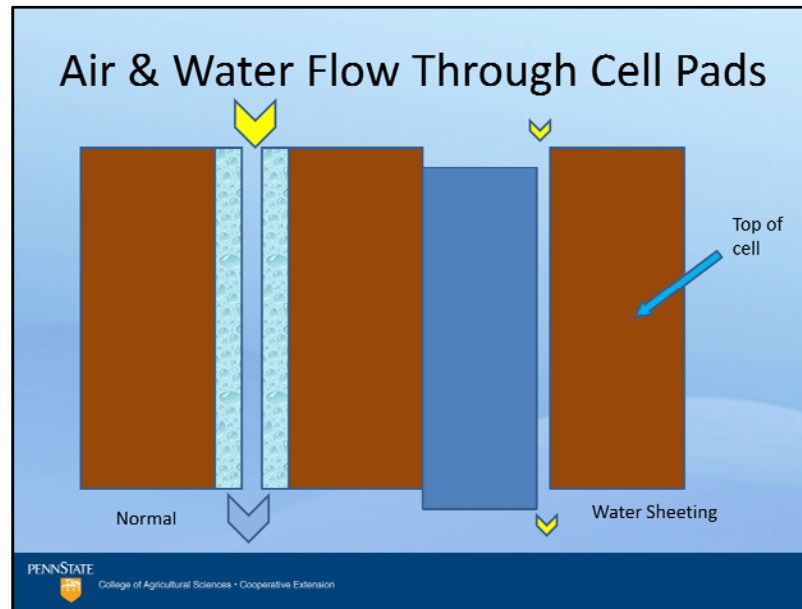
One of the critical things to remember is that as you drop air velocity through the pad you get a decreased efficiency in cooling. Dust, algae, feathers and other things that plug a cell will reduce air flow through the system. Keeping the system clear helps maintain efficiency.

Streaking – Improper wetting of pad



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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.

Measure, don't Guess on Environment



Use your test instruments
And computer to determine
Environmental parameters

LOOK AT THE BIRDS



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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.

Controlling Algae Growth

- Allow pads to dry each day
- Collection trough needs to drain after each use. No wet Feet!
- Blow feathers and dust off dry cells before start of new day if needed.
- Bleed off water from system to reduce circulation of Algae at least weekly.
- Use an approved cleanser / Algaecide. Rinse off larger materials from cells.

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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.

Goals of Hot Weather Brooding

- Reduce Flock Migration
- Reduce Body Heat
- Increase feed consumption
- Reduce Stress
- Reduce Respiratory diseases

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

Thank You !

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