

SCOOP from the COOP



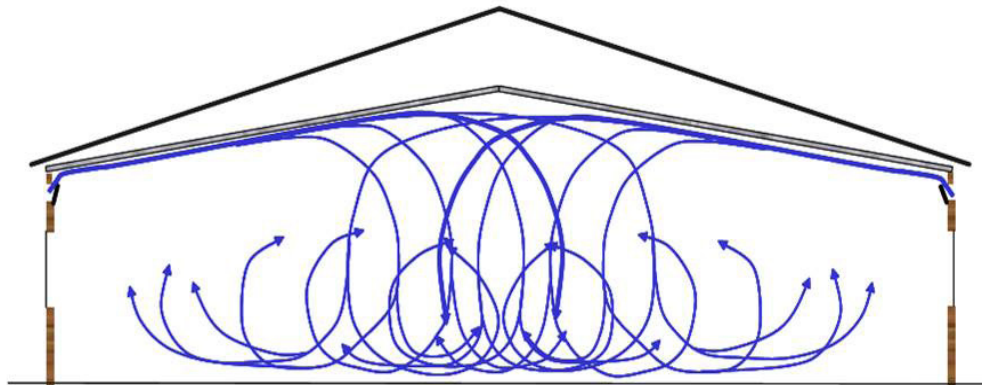
INLET MANAGEMENT

By: Justin Otten, Poultry Specialist

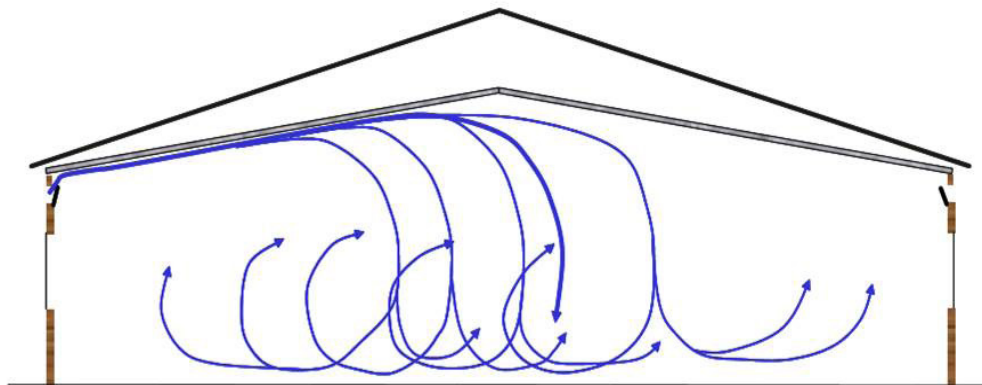
With the colder winter months approaching, it is important to ensure barn inlets are working at optimal condition. In this article I explain why it is important to have barn inlets working at their best. As well as how to make sure they are working for you and not against you.

When we are talking about minimum ventilation we are looking to move as little air in and out of the barn as possible. At the same time, we want to maintain an optimal environment for the chickens. We are doing this to avoid costly heating bills. So how can the inlets help achieve

this? When we look at the heat distributed in your barn, the hottest air is always the closest to the ceiling. This is where your inlets come in. They work by forcing the air to run along the ceiling allowing the coldest air to mix with the hottest air. When this is achieved, it will help mix all the



Air entering through staggered inlets



Air entering through inlets on one side of a house

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air in your barn, decreasing any dead air spots you may have. It will also help remove humidity from the air because as air is heated, it can hold more water molecules. The main measurement I use to make sure inlets are working properly is air speed. If the airspeed is too great the air runs along your ceiling and out the fans, pulling all that precious hot air out with it. If it is too low the cold air falls straight down causing cold spots on the floors. This can cool down temperature probes and cause heaters to run more than they need to. When the air speed is in the desired range (600-900 ft/min), the cold incoming air will travel along the ceiling long enough to warm up and achieve the nice tumbling action. There are some things you could look for if your air speed is too low. First you may see leaks or cracks which are often found around doors or fans but can be anywhere. Air will always go through the path of least resistance. When keeping that in mind, air will flow evenly through all openings. The more cracks or holes in your barn, the less air will be travelling through your inlets to the desired hot spots of your barn.

Secondly you can check your inlets are even. This is a bigger issue when you have baffle inlets. It follows the same line of thinking as having cracks and gaps. It will allow more air to enter the inlets causing a slower air speed. The biggest problem with this is that you will have to

draw in more air to maintain proper air speed. This will lead to more cold air coming in the barn and your heaters running more than necessary. You may want to try working with that added air flow by closing the inlet to increase static pressure which will bring up your air speed. I would rather see those extra openings fixed up. Another thing to keep in mind is that cold air is heavier than hot air. So, if you are using static pressure to measure your inlet efficiency you will need to run a higher pressure when the weather is cold to achieve the same air speed.

The third thing to check is that the fans are working properly. When your fans are not working to the best of their ability you will not be removing as much air as you think. This will often lead to wet litter and an increase in RH, CO₂, ammonia, and a decrease in oxygen. Whenever the birds are in suboptimal conditions it will stress them. When a bird is stressed, it will use energy to deal with that stress instead of using that energy for growth.

In summary, a poorly running inlet can have a big effect on everything from heating cost to bird performance. Taking the time to ensure that your system is running at peak performance will always pay off. Every barn will need a different plan in place. For a detailed look at your own system, reach out to your Hensall Co-op rep.