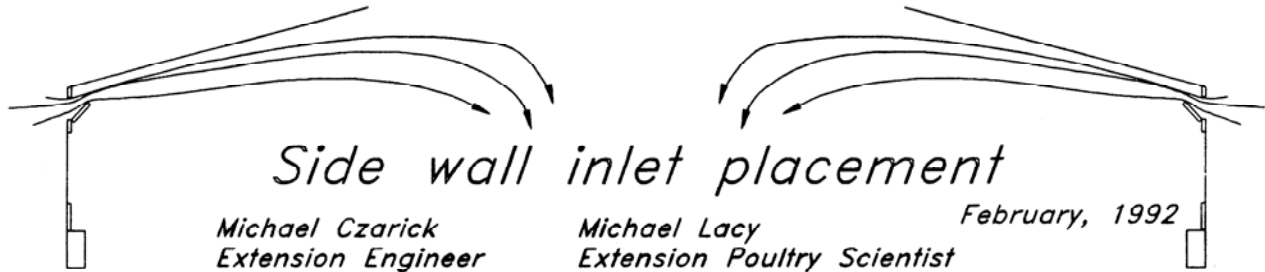




The University of Georgia Cooperative Extension Service

College of Agricultural and Environmental Sciences / Athens, Georgia 30602-4356

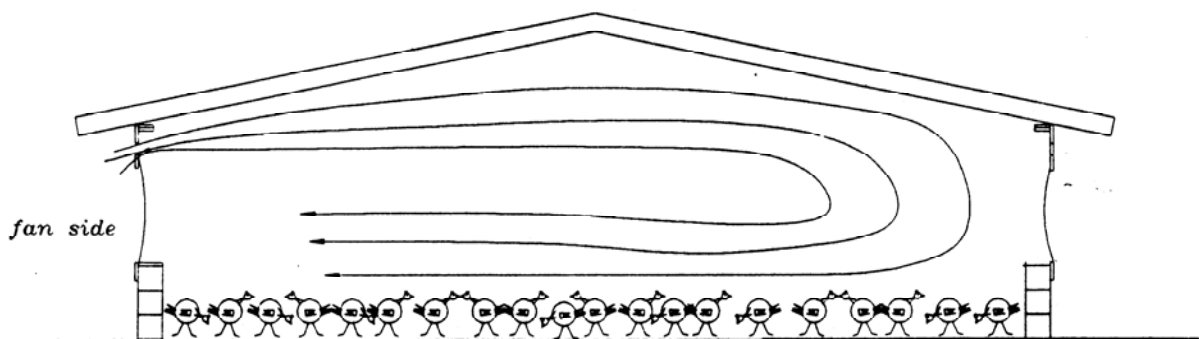


Side wall inlets are a crucial part of any negative pressure ventilation system. Inlets allow air drawn in by exhaust fans to be directed toward the ceiling, keeping the birds warm, or toward the floor, promoting cooling. In addition, inlets provide an inexpensive method of mixing the air within a house, minimizing fuel usage.

One of the keys to getting the most out of sidewall inlets is proper location. In the past there has been a substantial amount of debate on the best location for inlets. Some say it is better to have inlets on the exhaust fan side of the house than on the opposite side wall. Others argue that inlets should be on the north side of the house rather than the south side. And still others say inlets should be on both sides of a house. Who is correct? The truth of the matter is all of these opinions are correct at one time or another during a growout.

During different portions of the growout, a ventilation system is used for different purposes. With young birds during cold weather, we want to minimize drafts and move warm air off the ceiling. Conversely, for older birds during more mild weather, it is often desirable to have air movement on the floor. Since the goals of a ventilation system change, the inlets required to obtain these goals change.

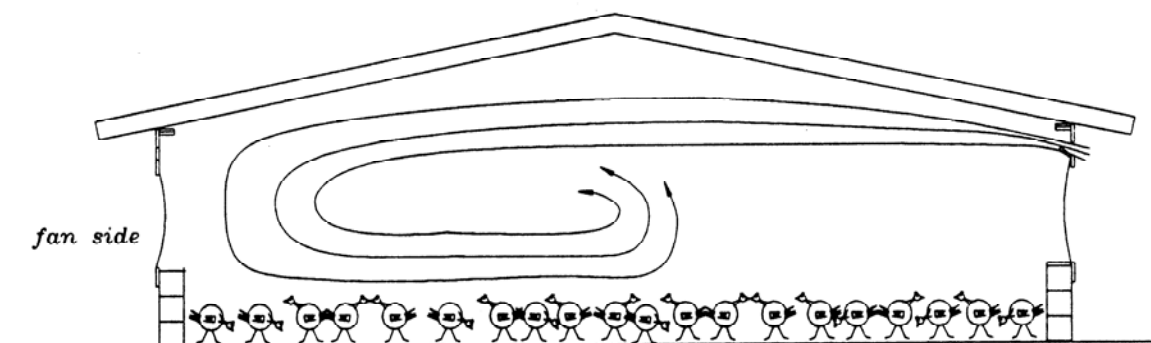
To minimize air movement on the floor, air entering through inlets needs to be kept near the ceiling as long as possible. The best way to do this is to use inlets on one side of the house. With sufficient pressure, it is possible for air to travel from one sidewall to the other. This keeps the air near the ceiling for a long period of time insuring that it is warmed thoroughly before it comes in contact with the birds.



PUTTING KNOWLEDGE TO WORK

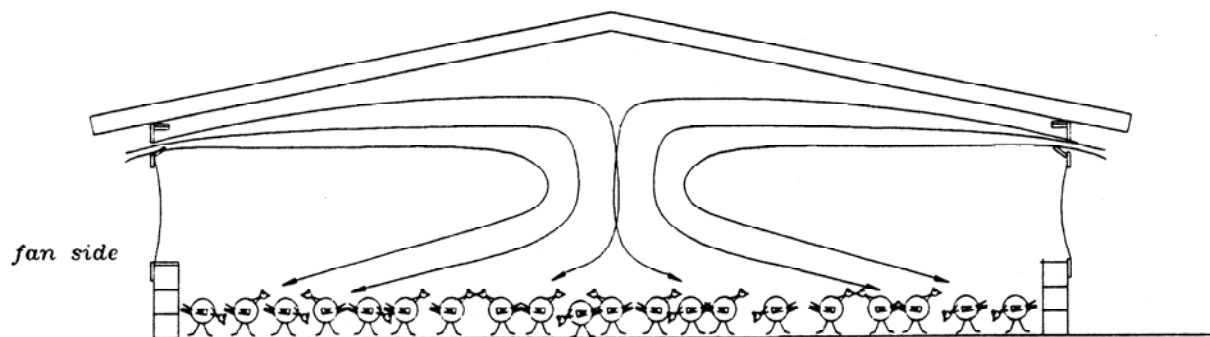
The University of Georgia and Ft. Valley State College, the U.S. Department of Agriculture and counties of the state cooperating.
The Cooperative Extension Service offers educational programs, assistance and materials to all people without regard to race, color, national origin, age, sex or disability.
An equal opportunity/affirmative action organization committed to a diverse work force.

Though inlets on either side of a house can be used, it is sometimes advantageous to use inlets on the same side of the house that the fans are on. It may sound impossible, but given the proper static pressure air will travel all the way across the house and then back to the exhaust fans. Since the air travels all the way across the house and then moves back to the exhaust fans, a more complete mixing of the air within a house occurs. This setup is best used with small birds during cold weather because it provides the most complete mixing of the air in the house with a minimal amount of floor air movement.

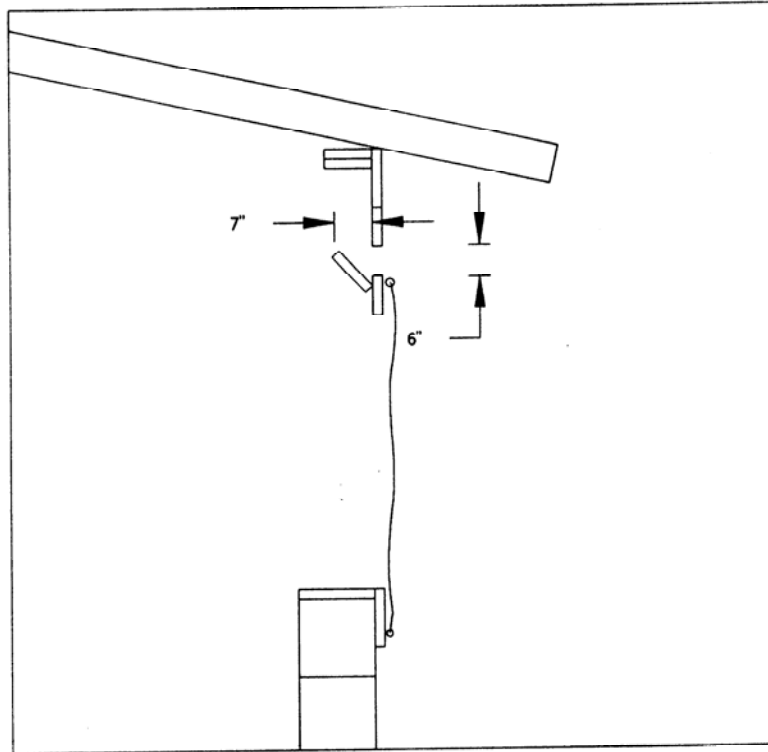


Though inlets can be used on the side wall opposite the exhaust fans, they don't provide quite the same amount of mixing. One instance when it is advantageous to use inlets on the opposite sidewall of the fans is when the wind is blowing on the fan side of the house. If inlets were open on this side of the house, excessive air could enter the house causing drafts and high fuel bills.

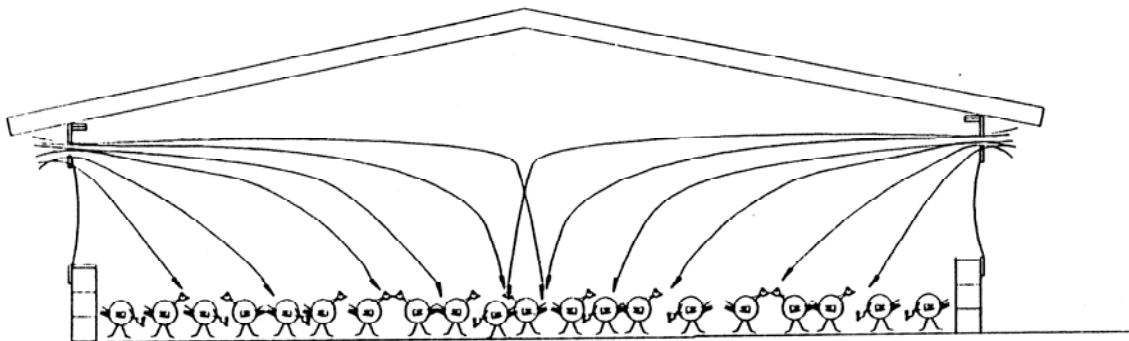
Inlets on both sides of the house should be used only when more air movement is needed within the house to produce more of a cooling effect or when it is imperative that the birds get lots of fresh air. By using inlets on both sides of the house the air only travels half as far before it reaches the birds. Air entering from both the sidewalls will meet in the middle of the house and then move down to the floor. Since air traveled only half as far, it is still moving relatively quickly and has not heated up as much. This method of ventilation can be used on older birds during cool to moderate weather or on younger birds during warm weather when its not quite warm enough to go to curtain ventilation.



One way to further increase the amount of air movement on the floor is to open the inlets all the way so that air travels directly into the house. After your inlets are opened about half way, the static pressure will not decrease any further if the inlets are opened more. This is because the distance between the top of the inlet and the sidewall is larger than size of the hole in the sidewall. So, if you have adequate static pressure with the inlets opened half way and you want more floor air movement, you can open the inlets all the way without sacrificing static pressure.

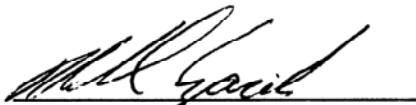


There is a significant difference in air movement on the floor between an inlet directing the air toward the ceiling and one that is wide open. With the inlets wide open the air moves straight into a house toward the birds. This minimizes the amount of heating of the incoming air as well as insures that birds are getting the freshest air possible. This setup is best used for older birds during warm or mild weather when draftiness is not a concern.

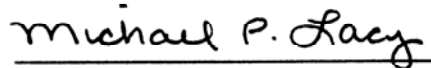


The key to using inlets is watching the birds and thinking about what they need. If the birds are cold and it is cold outside, keep the air near the ceiling as long as possible. If it is mild outside and the birds are older, use the inlets on both sides of the house to get the fresh air to them faster. If the birds are too warm, open the inlets wide to get the most amount of air movement on the floor.

When experimenting with inlets it is crucial that you watch your static pressure. If you don't have enough pressure, the system will not operate properly. If your static pressure is too low, close a few of the inlets all the way. You don't need to use all the inlets in your house to ventilate effectively. In fact, during the wintertime one inlet every 40' will in most cases prove sufficient to mix the air within the house.



Michael Czarick
Extension Engineer
(404) 542-2154



Michael P. Lacy
Extension Poultry Scientist