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Even though we are barely out of the cold weather season, now is the time to plan your strategy on how to keep hot weather from defeating you this summer. Don't wait until the heat is upon us to act; by then it will be too late. Take the initiative now and be ready ahead of time this year. Here are some thoughts on preparing tunnel-ventilated broiler houses for warm weather.

1) Wash Fan Shutters and Blades:

Dirty fan shutters and blades reduce the air moving capacity of a fan by 20% or more. Twenty percent may not seem like much at first until you realize that in a typical tunnel ventilated house with eight fans, a 20% reduction in fan capacity means you really only have a little over six fans. On a hot summer day would you really want to turn off the equivalent of two or more fans?

2) Replace Worn Fan Belts:

Just because a fan belt is tight does not mean that it doesn't need replacing. If you look closely at a fan belt moving over a pulley, you will see that the only surfaces that come in contact with the pulley are the sides of the belt. Over time the sides of a fan belt wear down due to friction between the belt and the pulley. As the belt becomes thinner, it rides lower in the fan and motor pulleys reducing the speed of the fan. Fan speed is directly related to fan output; if the speed is reduced by 20 percent, the output of the fan will be reduced by 20%. Field studies conducted by The University of Georgia as well as North Carolina State University have found a surprising number of farms where growers have done a great job keeping fan belts tight but where fan output was reduced by 20% or more due to the fact that the belts were worn.

Examine how the belt rides in the motor pulley on one of the 48" fans in your house that runs the least. Compare how that belt looks to the belt on the fans that run the most. If there is a noticeable difference, you probably should replace the belts on the 48" fans that run the most. Another way to check is to put a new belt on one of the fans and check the rest of the fans against it.

3) Wash Evaporative Cooling Pads:

Flush out your pads with a water hose. Since the air channels face both upward and downward at about a 45 degree angle, it is best when washing the pad to spray water up and then down at a 45 degree angle to match the angle of the air channels to insure that you flush any dust or feathers that may be clogging the air channel. Clogged air channels will reduce the exhaust fans' ability to draw fresh air into the house resulting in reduced ability to cool the birds.

4) Clean or Replace Worn or Clogged Fogging Nozzles

Evaporative cooling pads provide maximum cooling when they are thoroughly wetted. Clogged or worn nozzles may inhibit pad wetting and increase water run off from the pads.

5) Check House Tightness

During cold weather it is important that a house is tight to minimize heating costs. During hot weather, a house needs to be tight to maximize your ability to provide cooling. This is especially true of houses with evaporative cooling pads. Air entering through cracks and holes in the ceiling and side walls will dilute the cold air coming out of the pads with hot, outside air resulting in higher house temperatures.

A static pressure gauge is the best way to determine how tight your house is. Close all the inlets and side wall curtains. Turn on one 48" fan. Check the static pressure. The static pressure should be a minimum of 0.07". If it is below this you have excessive leakage and you should work on tightening up your house. Remember, the higher pressure you can obtain, the tighter your house is and the better job you can do of cooling your birds.

6) Check Your House Static Pressure When All the Tunnel Fans Are Operating:

With your fans and pads properly cleaned and maintained and your house properly tightened, open your tunnel curtain and turn on all your tunnel fans. Check the static pressure. In a house with evaporative pads, static will typically be between a 0.07" and 0.10". If the static pressure is much above 0.10", check to see if your pads are still dirty or if the tunnel curtain is blocking a portion of the pad. After you have made the necessary adjustments, make a record of the static pressure you obtained. Over the course of the summer, if the static pressure increases when all the fans are operating, your pads are getting dirty or the tunnel curtain is restricting the pad. If the static pressure decreases over the course of the summer, it could mean that your fans are moving less air. Your shutters probably need cleaning or the house is loose and the tightness of your side wall curtains should be double checked.

7) Clean and Repair Migration Fences:

The importance of installing migration fences in tunnel houses cannot be overemphasized. The decreased weight, higher feed conversion, higher condemnations, etc. that result from not using or misusing migration fences has been well documented. Clean the fences so air can move through the fence easily, make sure the fences are doing the job they are intended to do (keeping birds equally spaced throughout the length of the house), and install the fences early, within the first two weeks of the growout.

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