Why clean the evaporative cooling pads and system?

- Cooling pad function depends on the correct water flow to achieve proper pad wetting. The moisture-rich environment makes conditions more favorable for the growth of mold, mildew and algae, reducing water saturation of the pads and air freshness within the poultry house.
- Minerals such as calcium, magnesium and iron, as well as outside contaminants can block the pad (flutes/holes) and reduce cooling efficiency, making it more difficult for the fans to pull air into and through the house.
- Cooling system maintenance can extend the life of the cooling pads, provide a better environment for the bird and save on production costs.

Equipment

1. Gloves
2. Broom
3. Garden Hose
4. Vacuum Cleaner
5. Soft Bristle Brush
6. Pressure Washer
7. Stiff Wire

Procedure for Cleaning Cooling Pads and System

Note: The frequency of cooling pad cleaning depends on several factors, such as regional climate, pad usage, water quality, etc. The following procedure is a guideline for cleaning and flushing the pads on a quarterly basis or more, if needed.

Regular monitoring is mandatory. Check the pads regularly for anything that may block air flow through the pad. It is a good practice to dry the pads once a day, and run the water for 15 minutes with fans off (beginning of the day) to flush out any debris. The pads must remain wet over their entire area when cooling is desired. Also, replace the circulation water 3-4 times per month to reduce the chance of pathogen growth.

Procedure

Step 1 Prepare the cooling pads for cleaning by removing loose dirt and other organic material. At least 30 minutes before dry cleaning, turn off the water supply to dry the pad. Wearing protective gloves, use a broom or vacuum cleaner to remove any loose dirt, cobwebs or feathers from the pad.

Step 2 Once the cooling pads have been dry cleaned, carefully remove the pads from the frame (if possible) and check their condition. Pads that are broken or damaged should be replaced. Check the flute angle to identify the front and back sides of the cooling pad. Place the pads upright against a wall or structure so that they can be wet cleaned.

Step 3 Rinse the pads with water using a garden hose with a spray attachment. Do not use a pressure washer. It is important to angle the hose in the same direction as the pad flutes, so that any trapped debris is easily removed. It may be necessary to use a soft bristle brush to remove any adhered material. Repeat this process on the other side of the pad.

Step 4 Check whether there are algae or mineral deposits on the pads. If algae are attached on the pads, drain and disinfect the sump regularly. Do not leave the bottom of the pad sitting in water. Shade pad system, filter housing, and the sump pump if possible. Typically, quaternary ammonia products and acidic solutions can help remove algae. However, consult your manufacturers' dosing and advice. Don't use chlorine or other harsh oxidizing chemicals.

Procedure (cont.)

Step 5

Step 6

Step 7

Step 8

Step 5 Clean the pad frame with a pressure washer, repairing or replacing damaged parts if necessary.

Step 6 Clean the gutters by removing the end caps and flushing with water thoroughly in order to remove sediment.

Step 7 Any dirt or debris that has settled in the sump will also need to be removed via a pump or wet vacuum. Use a pump that is not part of the cooling system, such as a trash pump or wet vacuum cleaner, to remove the dirty water. Ensure that the inlet to the sump is cleared and clean, and change filters if necessary.

Step 8 Clean the water line by starting the pump and opening the end cap or flush tap of the header pipe, letting water flush through the distribution pipe. Carefully clean all distribution holes in the header with a screwdriver or soft bristle brush. Be careful not to alter the size of the holes in the header. Close the flush tap or refit the end cap.

Step 9 Once the cooling pads have dried thoroughly, reattach them back into the frame making sure that the pads are oriented correctly.

Step 10 Activate the pump without the fans to check water distribution of the cooling pads. Water should flow evenly along the distribution pipe and wet the pad thoroughly within 4 minutes.

Interpreting results

If it takes longer than 4 minutes to wet the pad completely or if water cannot flow evenly from one end of the pipe to the other:

- Check whether there are any blocked holes, and use a stiff wire starting at the holes nearest to the pump and work along the length of the pipe.
- Open the flush valve or end cap to wash out any debris that has been cleared from the distribution pipe holes.

If water is not evenly distributed along the length of the pad:

- Check for leaks in the gutter or distribution system.
- Check for adequate pressure in the distribution pipe.
- Check and adjust water flow.
- Check the distributor pipe. Make sure it is level.
- Check the filter. Change it if needed.
- Check to make sure an adequate pump is being used.
- Check the hardness of the water. It may need to be adjusted to a pH of 6-8.

Poor water distribution

If any dirt is found in the new water:

- Open the bleed valve and let water flush out until the water exiting is clear.