A 10-Point Guide to Successful Tunnel Ventilation Management

1. Tunnel ventilate only when cooling birds is the goal.

Tunneling when air temperature is not high enough, or birds are too young, can chill birds and hurt performance. Most common mistake is to allow tunnel to stay on past nightfall.

2. Turn on the right number of fans for cooling needed, depending on the age of the birds.

Effective temperature must be estimated. For a given air flow, wind-chill is greater with cooler air, and less with warmer air; greater for smaller birds, less with larger birds. Rules of thumb for wind chill effect created by the air movement from 48-inch fans are: Fully feathered birds – about 1.0-1.5 degrees of wind chill is created by each 48" fan running (the larger the birds, the lower the number). Young birds – about 10 degrees of wind chill is created by running one 48-inch fan for each week of age, plus one additional fan.
Example: For 3-week-old birds, 3 + 1 = 4 fans create 10 degrees of wind chill.

3. Watch the birds, not just the thermometer, to see how much (if any) cooling is needed.

The temperature the birds experience is not the same as the thermometer reading. We can calculate or estimate the *effective* temperature, but we must also see what the birds have to say: Steady-state behavior, with all birds dropping to the floor, usually indicates too much air movement. (Birds may also bed down in extreme heat.) Panting, lifting wings, and stopping feeding indicates birds are feeling too warm. Differences in bird behavior from one end of the house to the other usually indicate inadequate air flow, or need for more fans to be running.

4. Don't run fewer than half of the installed tunnel fans if you intend to be tunnel ventilating.

Tunnel ventilating with less than 50% of fan capacity (4 of 8, 5 of 10, etc) can result in a rise in house air temperature of 10 or more degrees from inlet end to fan end. If you need to exhaust built-up house heat, and fewer than half of the tunnel fans need to be on to do this, you should be in power (transitional) ventilation mode and drawing air through the sidewall vent boxes.

5. Monitor and maintain adequate airflow – the most important factor in hot weather.

Always keep tunnel inlets fully open. Partly closing tunnel inlets does not increase air velocity in the house, it severely reduces needed airflow. Keep fans and shutters clean and belts tight. Close all doors and seal all leaks or other openings, so all incoming air enters through tunnel inlets only.

6. If running evaporative pad cooling, monitor static pressure – should be 0.05 to 0.10.

In a pad cooled house, static pressure rising to 0.10 or above during full tunnel operation usually indicates insufficient pad area or clogged pads, and results in inadequate air exchange, air speed, and cooling. Consult your flock or area supervisor if this condition exists.

7. If pad cooling, monitor air temperature drop – should be 10-12 degrees F on a hot day.

If not, check key points 5 and 6 first. Then:

Make sure any possible air intake area not covered by pad is closed tight – including vent boxes, ceiling traps, leaks, sidewall curtains, pad room ceilings, and end or side doors.

Check for and correct dry areas on pads. More air will flow through dry areas, and we must evaporate water to get good cooling. Check booster pump pressure for a minimum of 180-200 PSI (spray pads only).

8. If supplementary in-house foggers are used in a pad cooled house, start fogging only after all tunnel fans are on and temperature rise is 5°F or more from one end of the house to the other.

Each fogging line should be equipped with an independent cut off valve. If birds or floor start to get wet, individual lines may be cut off.

9. Protect your flock against power outage or major ventilation breakdown.

Heat and humidity levels during a power outage will rise rapidly and reach lethal levels within 10 to 20 minutes, depending on the age of birds. Set all curtain minders and monitor thermalarm settings carefully. Check and service back-up generators regularly. Keep spare breakers, belts, tips, etc on hand.

10. Install migration fences as soon as birds are in whole house.

Birds will migrate in tunnel houses toward the air inlet end, and crowding will hurt performance. Without fences, a house can lose the production advantage of the tunnel environment. Install fences not later than day 21.

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