

# Tunnel Ventilation For Broilers

## 1. Purpose Of Tunnel Ventilation

- ◆ Tunnel ventilation is used in warm to hot weather or where large birds are grown (>3kg [6.6lbs]).
- ◆ High velocity airflow increases wind chill removing excess heat and providing a cooling effect.



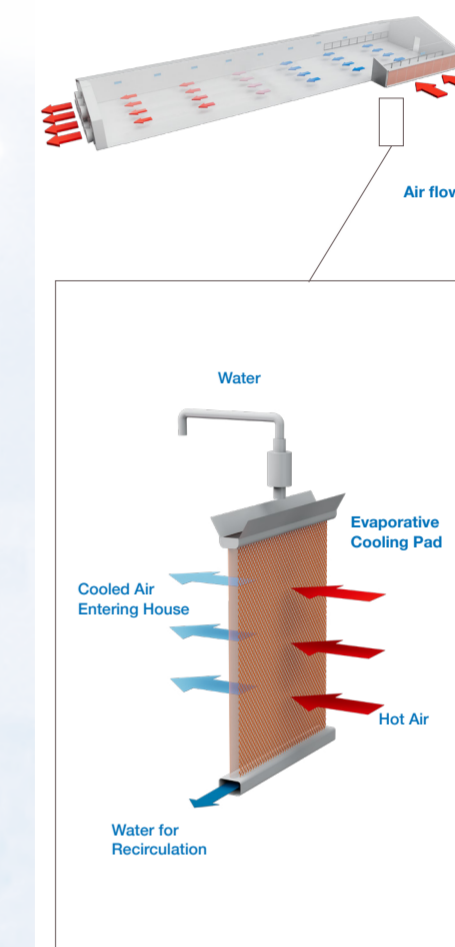
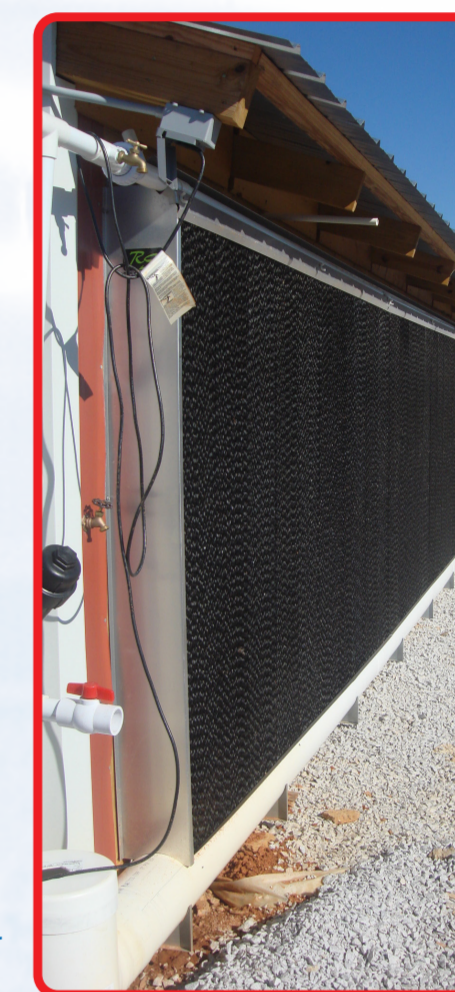
## 2. Air Volume And Speed

- ◆ Pressure
  - Appropriate negative pressure to provide adequate airspeed and create a wind chill effect.
- ◆ Inlets
  - Side wall inlets closed.
  - Tunnel inlets open to allow unrestricted airflow and tunnel fans to work efficiently.
- ◆ Fans
  - Side wall fans off.
  - Tunnel fans on.
  - Number of fans / air speed adjusted for **bird behavior**.
  - Tunnel fan louvers open.
- ◆ Air Speed
  - Measure at 3 to 4 points across the middle of the house just above bird height.
  - Target 2.5-3m/s (492-591 ft/min) average.



## 3. Evaporative Cooling

- ◆ Only use if ambient RH <75% and air speed is sufficient >1.5m/s, (295ft/min).
- ◆ Wind chill effect will be increased.
- ◆ **Monitor bird behavior.**
- ◆ Cooling Pads
  - Maintain clean and dust free.
  - Cycle water pumps to maintain a constant and uniform house temperature.
  - Cooling pad size must ensure correct fan operating pressure can be achieved.
- ◆ Fogging systems
  - Use either high (28-41 bar) or ultra high (48-69 bar) pressure systems for maximum cooling effect.
  - Place near inlet openings.

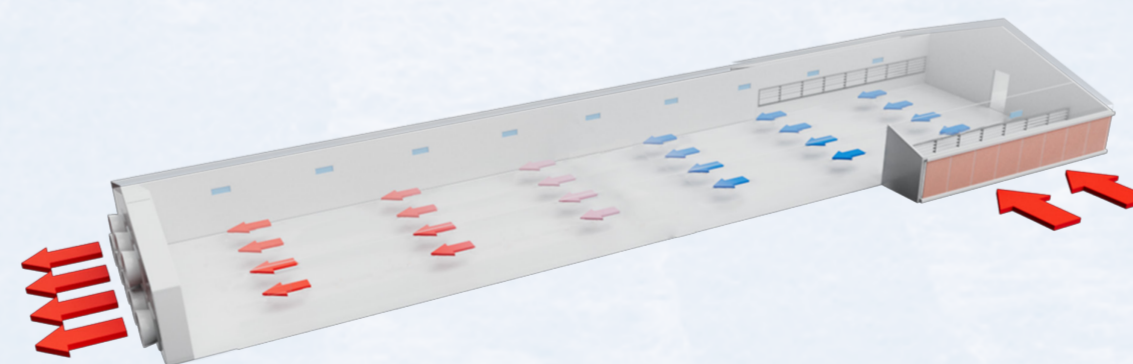


## 4. Migration Fences



- ◆ **Migration fences**
  - Prevent birds migrating towards inlet end of house in hot weather.
  - Ensure:
    - Stocking densities are maintained down length of house.
    - Uniform access to feeders and drinkers.
    - Uniform airflow across birds.

## Typical Air Movement During Tunnel Ventilation



Library photographs for teaching purposes.

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## 5. Monitor and Evaluate

- ◆ **Regardless of what the house thermometer is showing evaluating bird behavior is the only real way to determine if tunnel ventilation settings are correct.**

Observation	Birds feeling	Corrective Action
Birds sitting down and huddling	Too cold	Reduce airspeed by decreasing fan number and / or increasing house negative pressure. Turn cooling pads off
Birds spread out around house with wings held slightly away from body Birds lying on one side with one wing away from body More than 10% of flock panting	Too hot	Increase air speed by increasing fan numbers, reducing negative pressure. Turn cooling pads on if they are off