

### WHY IS CHICK COMFORT IMPORTANT?

- When chicks hatch they are not able to control their body temperature.
- The correct holding temperature for chicks will depend on air speed and humidity.
- If chicks are too hot or cold they will be stressed, use more energy and, if too hot, will pant and lose water at a faster rate.
- Chicks that are not at the correct temperature will have poorer broiler performance.



## HOW TO MEASURE CHICK COMFORT?

- Chick comfort can be determined by measuring chick vent temperature using a medical ear thermometer.
- Chick vent temperature is highly correlated with deep body temperature, although it tends to be 0.6°C (1°F) cooler.
- The optimum chick vent temperature is 39.4 – 40.5°C (103 – 105°F).
- Monitor chick behavior; chicks use behavior to help control their body temperature.



Chicks that are too cold, below 39.4°C (103°F), start to huddle and have cold legs and feet.



Chicks at correct temperature are quiet and evenly spread out in the box.



Chicks that are too hot, above 40.5°C (105°F), start panting.

## WHEN AND WHERE TO MEASURE CHICK VENT TEMPERATURE

- Chick vent temperature should be used to check chick comfort in hatchers, chick rooms, chick trucks and during the first 2 days of brooding.
- Chicks should be sampled throughout the area where they are being held and from near the top, middle and bottom of chick box stacks.
- Pay particular attention to areas:
  - where chicks are observed to be panting or huddling
  - where there is fast air movement around the chick boxes
  - near walls and doors



## PROCEDURE TO MEASURE CHICK VENT TEMPERATURE

- Equipment required: Medical infrared ear thermometer - recommended brand Braun ThermoScan® IRT4520 thermometer.
- Other brands and models are available but they may not be as accurate.



### Step 1:

Check that the measuring tip of the thermometer is clean and has a new plastic cover on.

### Step 2:

If, to take a measurement, the chicks need to be removed from the environment where they are being held (e.g. when checking in hatchers), the measurements need to be made within 10 minutes of the chicks being removed.

### Step 3:

At each sampling position measure the vent temperature of 5 chicks. Reject any chicks with wet or dirty vents.

**Note:** If chicks are huddling do not select chicks from the center of the huddle.

### Step 4:

Pick up one chick, and hold it so that you can see the vent. With your thumb, gently push the rump of the chick upwards, so that the vent is exposed.

### Step 5:

Put the tip of the ThermoScan® gently onto the vent, making sure it only touches bare skin, and press the button. Wait for the light to stop flashing, and note the temperature on a recording sheet.



Example of a recording sheet:

Target Chick Vent Temperature 39.4 – 40.5°C (103 - 105°F)

| Stack Location | Box in Stack | Chick Number        |                     |                     |                     |                     | Mean                | Comment                                                         |
|----------------|--------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|-----------------------------------------------------------------|
|                |              | 1                   | 2                   | 3                   | 4                   | 5                   |                     |                                                                 |
| Front Right    | Top          | 39.4°C<br>(102.9°F) | 39.6°C<br>(103.3°F) | 39.3°C<br>(102.7°F) | 39.5°C<br>(103.1°F) | 39.8°C<br>(103.6°F) | 39.5°C<br>(103.1°F) | Okay                                                            |
|                | Middle       | 40.2°C<br>(104.4°F) | 39.8°C<br>(103.6°F) | 40.0°C<br>(104.0°F) | 40.1°C<br>(104.2°F) | 40.1°C<br>(104.2°F) | 40.0°C<br>(104.0°F) |                                                                 |
|                | Bottom       | 39.5°C<br>(103.1°F) | 39.2°C<br>(102.6°F) | 39.9°C<br>(103.8°F) | 39.7°C<br>(103.5°F) | 39.4°C<br>(102.9°F) | 39.5°C<br>(103.1°F) |                                                                 |
| Front Left     | Top          | 39.8°C<br>(103.6°F) | 39.6°C<br>(103.3°F) | 39.7°C<br>(103.5°F) | 40.0°C<br>(104.0°F) | 39.7°C<br>(103.5°F) | 39.8°C<br>(103.6°F) | Okay                                                            |
|                | Middle       | 40.6°C<br>(105.1°F) | 40.5°C<br>(104.9°F) | 40.3°C<br>(104.5°F) | 40.4°C<br>(104.7°F) | 40.4°C<br>(104.7°F) | 40.4°C<br>(104.7°F) |                                                                 |
|                | Bottom       | 39.5°C<br>(103.1°F) | 39.8°C<br>(103.6°F) | 39.7°C<br>(103.5°F) | 39.5°C<br>(103.1°F) | 39.4°C<br>(102.9°F) | 39.6°C<br>(103.3°F) |                                                                 |
| Back Right     | Top          | 38.3°C<br>(100.9°F) | 38.5°C<br>(101.3°F) | 38.6°C<br>(101.5°F) | 38.7°C<br>(101.7°F) | 39.4°C<br>(102.9°F) | 38.7°C<br>(101.7°F) | Chicks<br>huddling -<br>cold draft<br>from door                 |
|                | Middle       | 38.8°C<br>(101.8°F) | 38.6°C<br>(101.5°F) | 39.4°C<br>(102.9°F) | 39.3°C<br>(102.7°F) | 38.8°C<br>(101.8°F) | 39.0°C<br>(102.2°F) |                                                                 |
|                | Bottom       | 38.5°C<br>(101.3°F) | 38.2°C<br>(100.8°F) | 38.2°C<br>(100.8°F) | 38.4°C<br>(101.1°F) | 38.2°C<br>(100.8°F) | 38.3°C<br>(100.9°F) |                                                                 |
| Back Left      | Top          | 40.5°C<br>(104.9°F) | 40.4°C<br>(104.7°F) | 40.6°C<br>(105.1°F) | 40.5°C<br>(104.9°F) | 40.3°C<br>(104.5°F) | 40.4°C<br>(104.7°F) | Chicks<br>panting -<br>not enough<br>space<br>between<br>stacks |
|                | Middle       | 41.0°C<br>(105.8°F) | 40.8°C<br>(105.4°F) | 41.3°C<br>(106.3°F) | 41.2°C<br>(106.2°F) | 41.0°C<br>(105.8°F) | 41.1°C<br>(106.0°F) |                                                                 |
|                | Bottom       | 40.9°C<br>(105.6°F) | 40.8°C<br>(105.4°F) | 40.8°C<br>(105.4°F) | 41.0°C<br>(105.8°F) | 40.9°C<br>(105.6°F) | 40.9°C<br>(105.6°F) |                                                                 |

## INTERPRETATION OF RESULTS

|             | Vent Temperature less than<br>39.4°C (103°F)                                                                                                                                                                                         | Vent Temperature more than<br>40.5°C (105°F)                                                                                                                                                                                                                              |
|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| All chicks  | <ul style="list-style-type: none"> <li>• Increase holding temperature</li> </ul>                                                                                                                                                     | <ul style="list-style-type: none"> <li>• Decrease holding temperature</li> </ul>                                                                                                                                                                                          |
| Some chicks | <ul style="list-style-type: none"> <li>• Cold air drafts</li> <li>• Wet floors</li> <li>• Wet chicks (e.g. after vaccination)</li> <li>• Uneven air circulation around boxes</li> <li>• Chicks held too long on carousels</li> </ul> | <ul style="list-style-type: none"> <li>• Poor air circulation around chick boxes</li> <li>• Chick boxes:               <ul style="list-style-type: none"> <li>- too close together</li> <li>- too close to a wall</li> <li>- too near heater units</li> </ul> </li> </ul> |

## MORE INFORMATION

- Ross Tech – Investigating Hatchery Practice
- Ross Tech – Hatchery Maintenance
- Others in the Hatchery How To series:

- 01 Measure Egg Water Loss**
- 02 Measure Chick Yield**
- 03 Measure Eggshell Temperature**
- 04 Identify Infertile Eggs & Early Deads**
- 05 Break Out and Analyze Hatch Debris**
- 06 Monitor Setter Temperature Variation**