Winter Management

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Agenda

- Winter and it's challenges.
- Pre-Placement.
- Brooding.
- Ventilation

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Winter & its challenges

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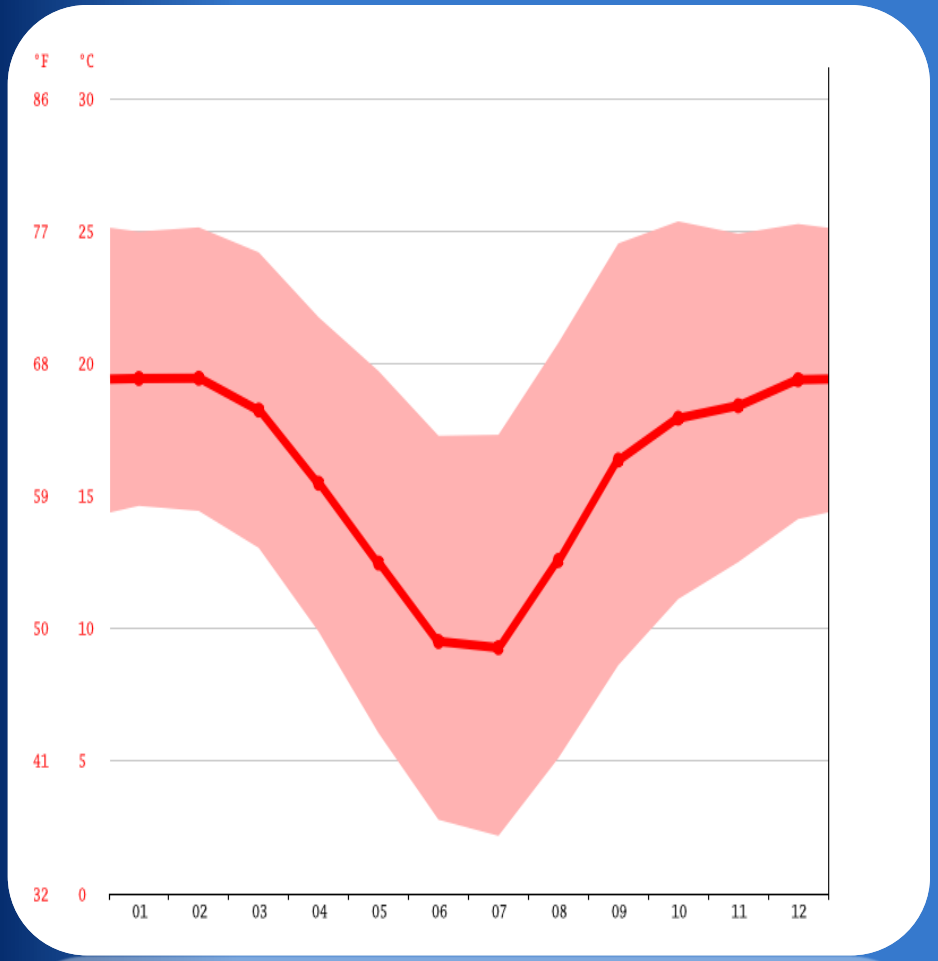
Daily Temperature Variation



- Major gap between lowest and highest temperatures.
- How to heat-up.
- How to stimulate the birds.

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Temperatures

Body Weight g (lb)	Dry Bulb Temperature °C (°F)			
	40 RH%	50 RH%	60 RH%	70 RH%
44 (0.10)	36.0 (96.8)	33.2 (91.8)	30.8 (87.4)	29.2 (84.6)
100 (0.22)	33.7 (92.7)	31.2 (88.2)	28.9 (84.0)	27.3 (81.1)
180 (0.40)	32.5 (90.5)	29.9 (85.8)	27.7 (81.9)	26.0 (78.8)
290 (0.64)	31.3 (88.3)	28.6 (83.5)	26.7 (80.1)	25.0 (77.0)
425 (0.94)	30.2 (86.4)	27.8 (82.0)	25.7 (78.3)	24.0 (75.2)
590 (1.30)	29.0 (84.2)	26.8 (80.2)	24.8 (76.6)	23.0 (73.4)
790 (1.74)	27.7 (81.9)	25.5 (77.9)	23.6 (74.5)	21.9 (71.4)
1015 (2.24)	26.9 (80.4)	24.7 (76.5)	22.7 (72.9)	21.3 (70.3)
1260 (2.78)	25.7 (78.3)	23.5 (74.3)	21.7 (71.1)	20.2 (68.4)
>1530 (3.37)	24.8 (76.6)	22.7 (72.9)	20.7 (69.3)	19.3 (66.7)

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Effective Temperature

Humidity	Temperature 20°C	25°C	30°C	35°C
50 %	22	28	36	45
60 %	24	30	38	46
70 %	25	32	41	49
75 %	26	33	42	50
80 %	26	33	43	52
85 %	27	34	44	53

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Stockmanship is key

1 Sight

Observe behaviors such as bird distribution in the house and number of birds feeding, drinking, preening, mating and using nest boxes. Observe the environment, such as dust in the air and litter quality. Observe bird health and demeanor, such as posture, alertness, eyes and gait.

2 Smell

Keep notice of smells in the environment, such as ammonia levels. Is the air stale or stuffy?

3 Hearing

Listen to the birds' vocalization, breathing and respiratory sounds. Listen to the mechanical sounds of fan bearings and feed augers.

4 Feel

Handle the birds to assess crop fill and check the birds' general condition (breast conformation, vent and feather condition). Take notice of air movement across your skin. Is there a draft? What does the temperature of the house feel like?

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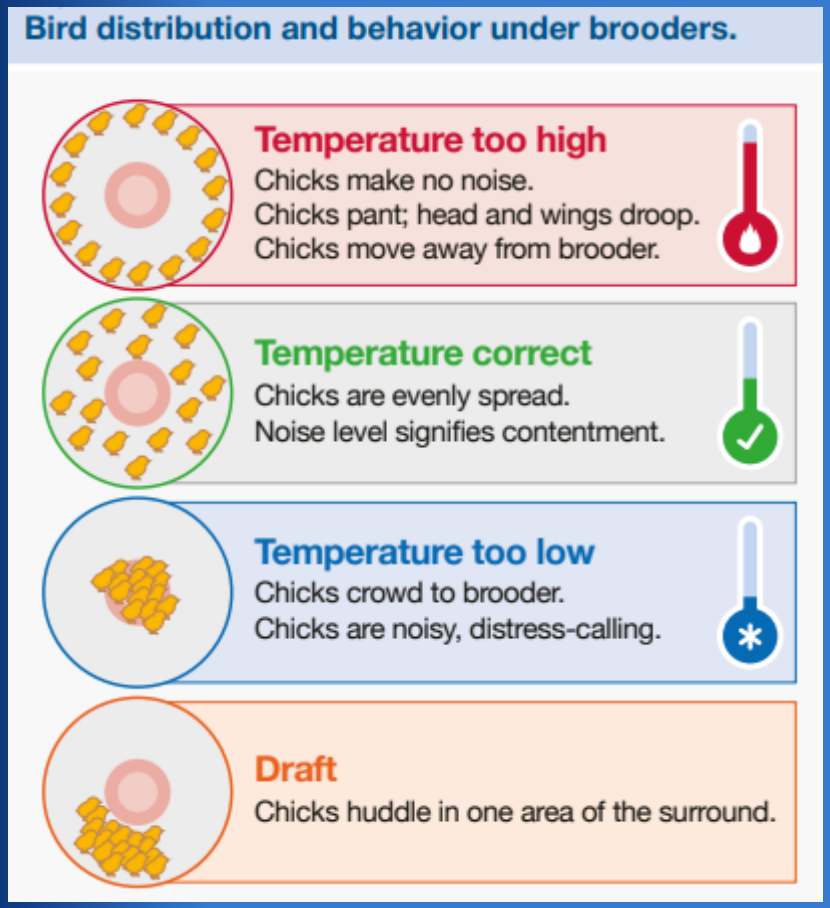
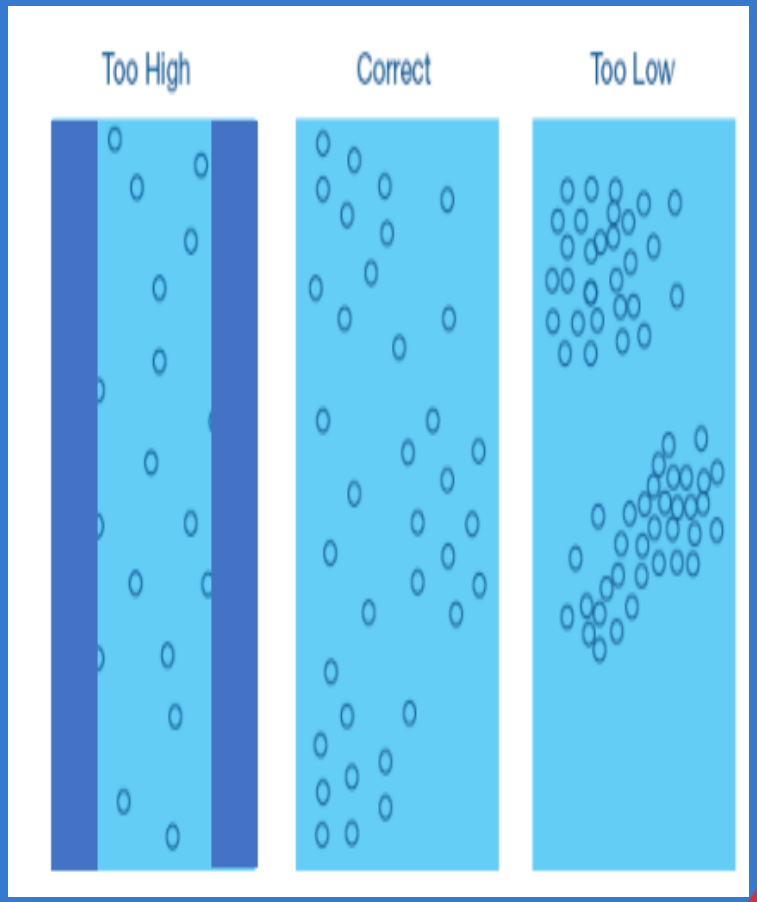
Chick Behavior – Temperature





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Pre-Placement

PRE-WARMING IS KEY!

- For How Long?
  - Must be stabilized 24h prior to chicks arrival.
- What temperatures?
  - Air: 30 – 32°C
  - Floor: 28 – 30°C
  - RH%: 60-70%
- Avoid very high floor temperatures:
  - > 32°C
- Litter temperature:
  - 30 - 32°C

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Planning

- Chicks should not have to travel more than one meter to access feed or water.
- Floor coverage of between 80-90% with brown paper.
- Additional scratch feeders and drinker founts to ensure easier access to feed and water.
- Shaving/bedding depth during winter 5cm.
- Light intensity of 40 lux during first 7-days.

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Preparations

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Good Preparation

- No magic involved.
- Just hard work.
- Careful planning.
- Teamwork and understanding,of chicks requirements.

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Scratch Feeders

- Fill additional feeders slightly. Do not over fill!
  - We need to create an appetite. Smaller quantities more often .

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Feeder Pans

- Suggest not to flood pans on the day of placement.

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Founts

- Fill drinker founts.
  - Do not overfill. Fill it half way 20 minutes prior to receiving chicks.
  - 12 mini drinkers/1000 chicks.

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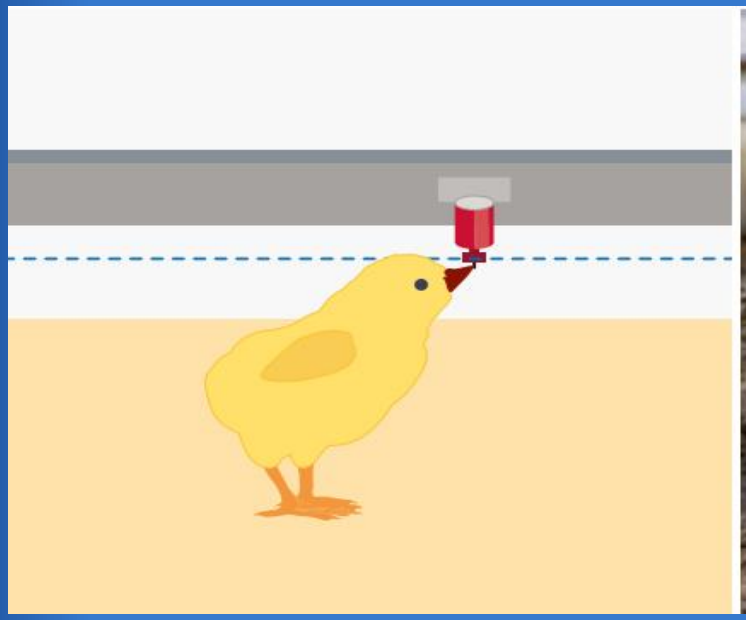
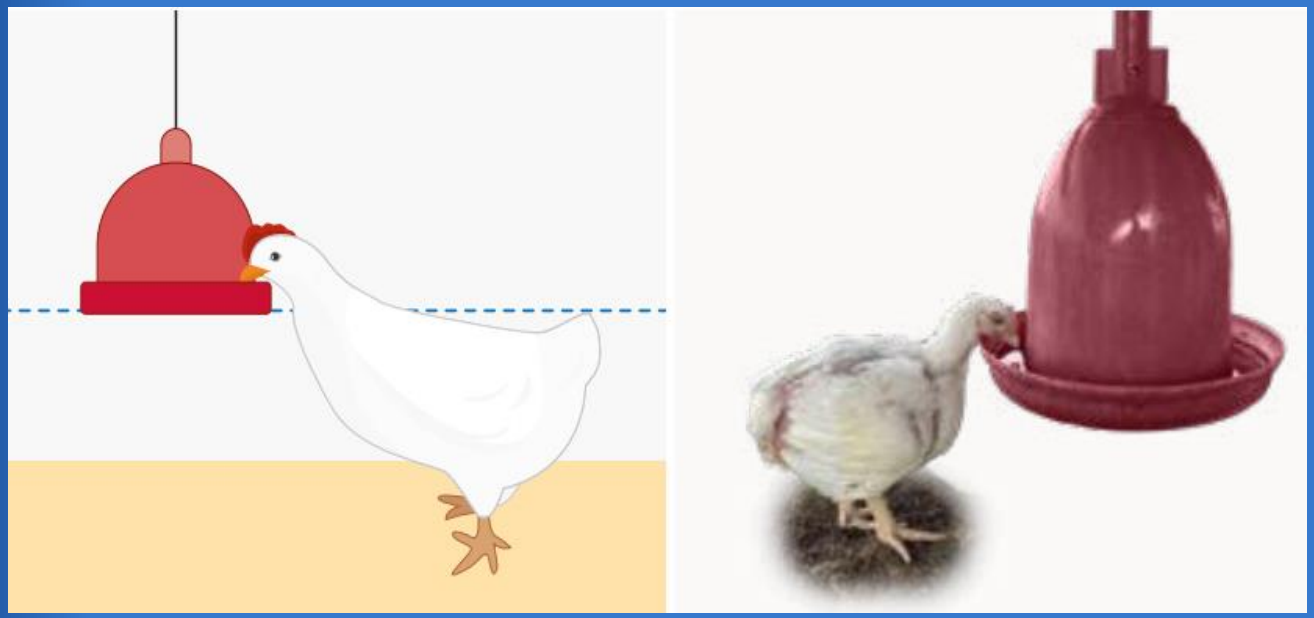
Nipple line height and space.

- Allow fair access to water for all chicks.
- 10 – 12 birds/nipple.



Bell drinker height and space.

- Allow fair access to water for all chicks.
- Space: 1.5 cm/bird.



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Feed and Water Correlation.

When water intake changes 98% of the time feed intake changes

- Therefore, insure to monitor daily water intake.
- A increase of water intake will occur as the chicks grow, and with environmental conditions.
- **No water intake = feed intake = no growth!**

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Brooding

Brooding

- Flush drinker lines right before placement.
  - Water temperature for optimal consumption should be, 18-21°C.

Effect of water temperature on water intake.

Water Temperature	Water Intake
Less than 5°C (41.0°F)	Too cold, reduced water consumption
18-21°C (64.4–69.8°F)	Ideal
Greater than 30°C (86.0°F)	Too warm, reduced water consumption
Above 44°C (111.2°F)	Birds refuse to drink

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Placement

- Arrival of chicks.

- Why?
  - To have a starting point.
  - Determine 7-day BW targets.
  - Determine CV%.

- Why?
  - Determine if environmental conditions are optimal.
  - Should be 39.4 – 40.5°C

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Main Factors For Success

- Management.
- Temperatures.
- Feed and Water Intake.
- Crop Fill (After placement and 24 Hours).
- 7-Day Bodyweight.
- 7-Day Mortality Rate.

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Crop Fill

Time of Crop Fill After Placement	Minimum Crop Fill (% of chicks with full crop)
2 hours	75
4 hours	80
8 hours	>80
12 hours	>85
24 hours	>95

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Crop score assessment

- Collect a good amount of chicks at 3 different locations within the house.
- The sample should represent the flock.
- Gently feel the crop of each chick.

<u>Categories</u>

  - Full, soft and rounded – Chicks have found feed and water
  - Full but hard with original feed texture – Chicks found feed but little to no water.
  - Full but soft – Chicks found water but little to no feed.
  - Crop empty– Chicks have not found feed or water.

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Growth Factor

- Genetic potential = 4.5 – 5.0
- So what is my BW target for day-7?

213g

Day old?

44g

÷ 4.84

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Are you extracting the full potential?

7 days BW

- 39g

Day old BW x 4.5

175.5g
Avg.

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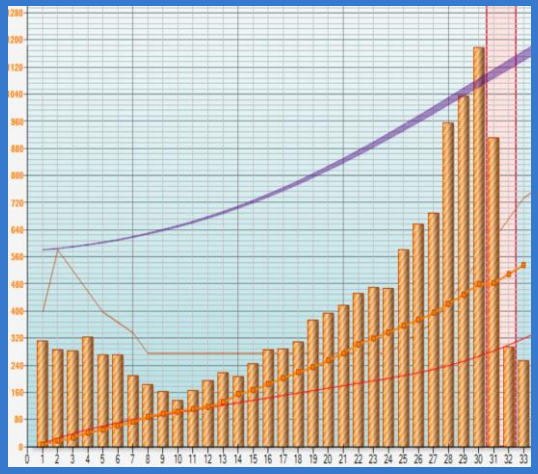
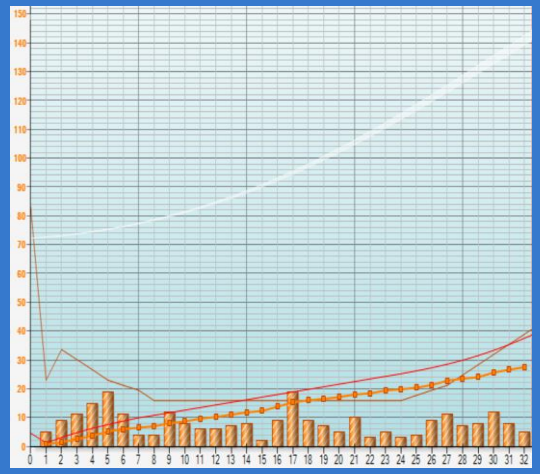
7-Day Mortality Rate

- Aim for 1% or less for day 7.
  - ➢ High mortality rates especially at the end, will have an impact on your Feed Conversion, and subsequent performances.





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Ventilation

Why do we need to ventilate?

- Control moisture levels.
- Remove harmful gases.
- Create an air exchange.
- Control litter quality.
- Manage the effective temperature.

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Air Quality

Ammonia	Ideal level <10 ppm. Can be detected by smell at 20 ppm or above. >10 ppm will damage lung surface. >20 ppm will increase susceptibility to respiratory diseases. >25 ppm may reduce growth rate depending upon temperature and age.
Carbon Dioxide	Ideal level <3,000 ppm. >3,500 ppm causes ascites. Carbon dioxide is fatal at high levels.
Carbon Monoxide	Ideal level <10 ppm. >50 ppm affects bird health. Carbon monoxide is fatal at high levels.
Dust	Damage to respiratory tract lining and increased susceptibility to disease. Dust levels within the house should be kept to a minimum.
Humidity	Ideal level 50–60% after brooding. Effects vary with temperature. When temperature is >29°C (84.2°F), if RH is >70% or <50%, particularly during brooding, performance will be affected.

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Air

- Use minimum ventilation from the day of placement.
- Establish a minimum ventilation rate to provide a air exchange and to remove waste gasses while maintaining temperatures.
- Avoid cold air drafts!
- Monitor chick behaviour to determine if the environmental conditions are correct.
- Minimum ventilation should run on a cycle timer and not temperature.

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Seal the houses.

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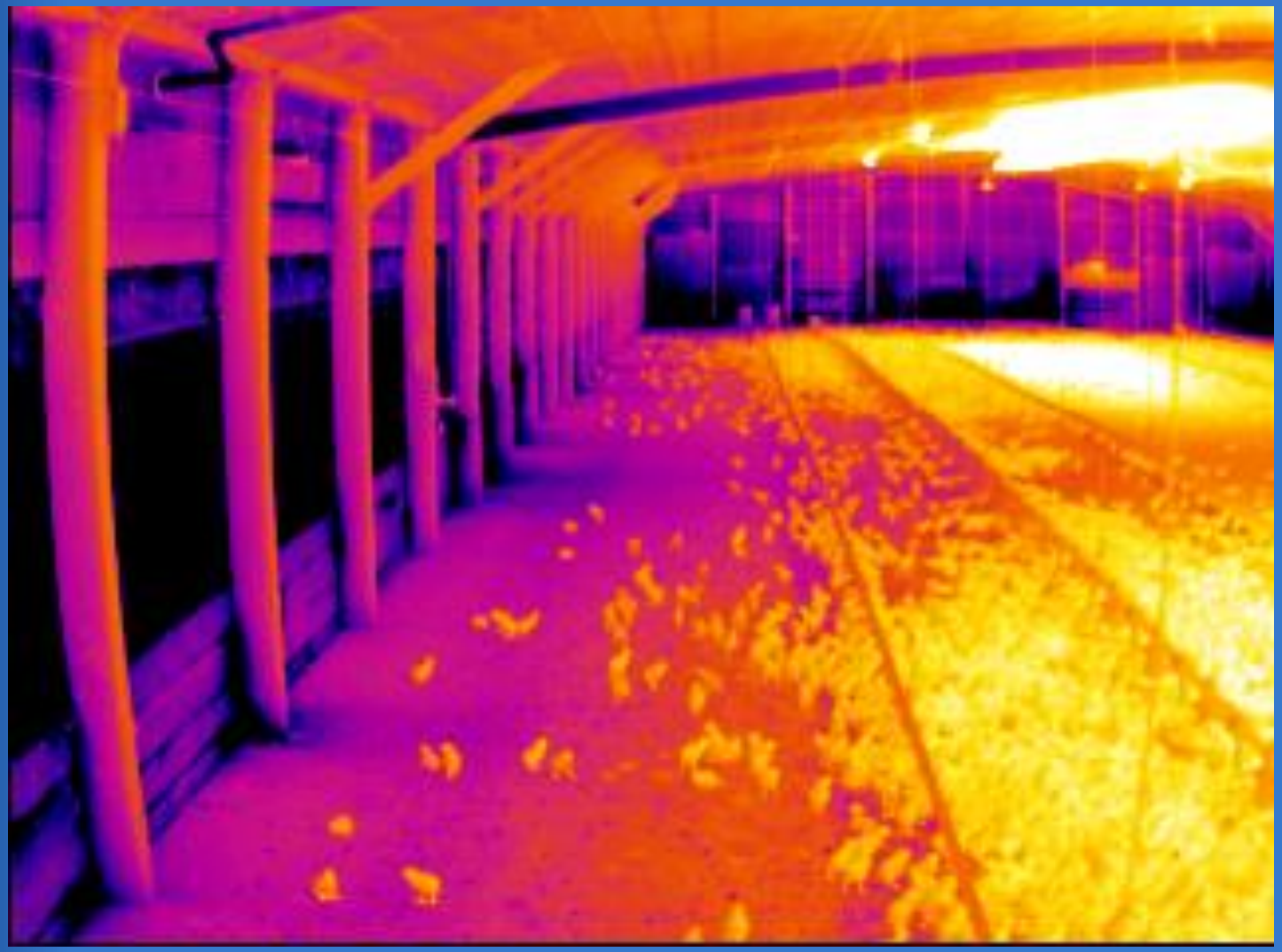

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Seal the houses.

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Key Points for Minimum Ventilation.

- It essential to provide some ventilation to the house regardless of the outside conditions
- Minimum ventilation is used for young chicks, night-time or in cold weather.
- Make sure you have enough SP, to prevent cold air dropping to the floor
- If incoming airflow speed is too low:
  - **Cold air drop onto the birds and litter.**
  - **There must be no cold air drafts at chick level.**

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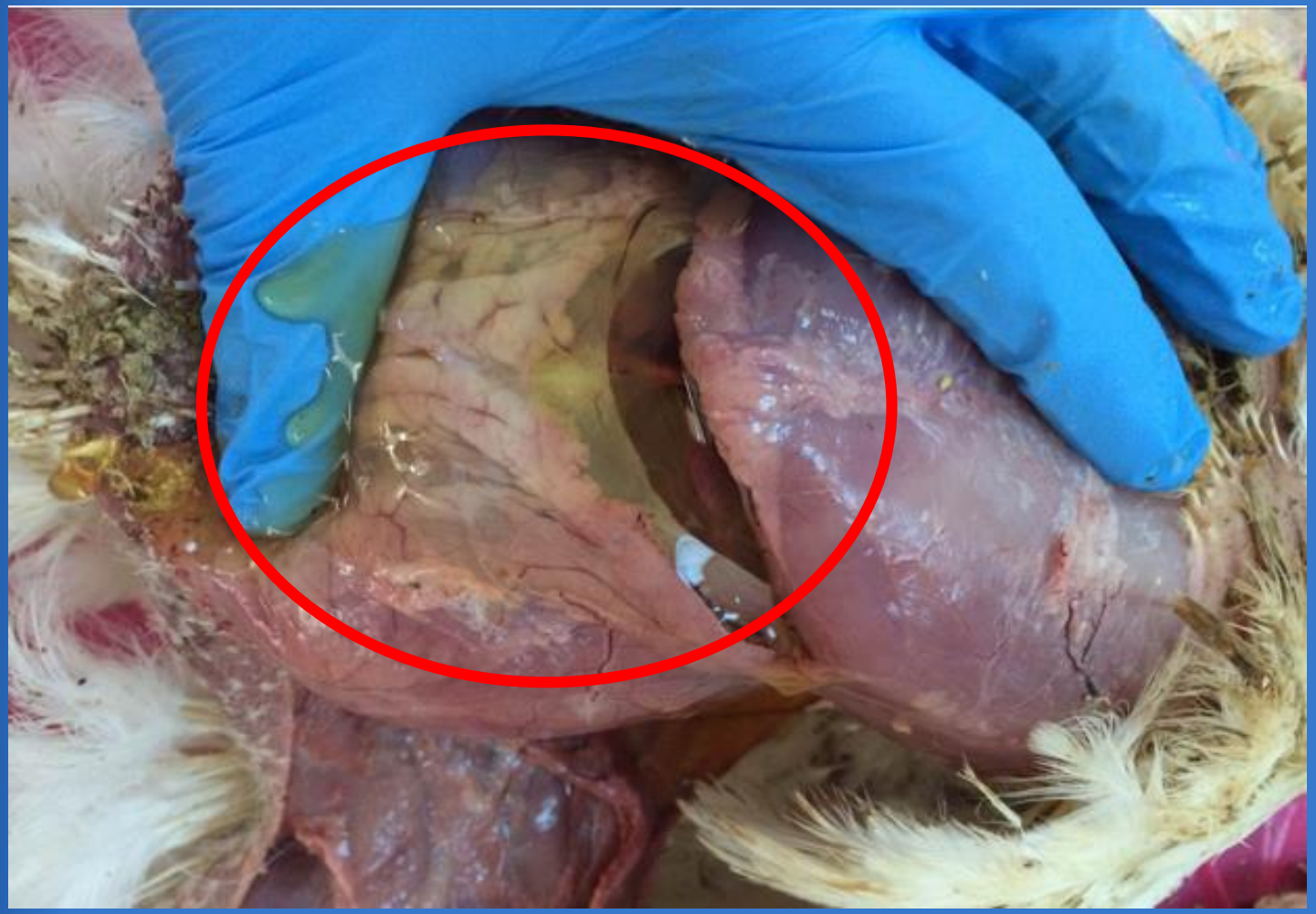
Seal the houses.



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Summary

Summary

- Environmental conditions play a major role.
- Do not over heat your houses.
- Avoid cold air drafts.
- Do not restrict ventilation.
- It is important to get chicks drinking and eating as soon as possible to start the utilisation of the yolk sac.
- A good chick start is of utmost importance for the structure of the gut and the ability to absorb nutrients.

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Best equipment you can have?

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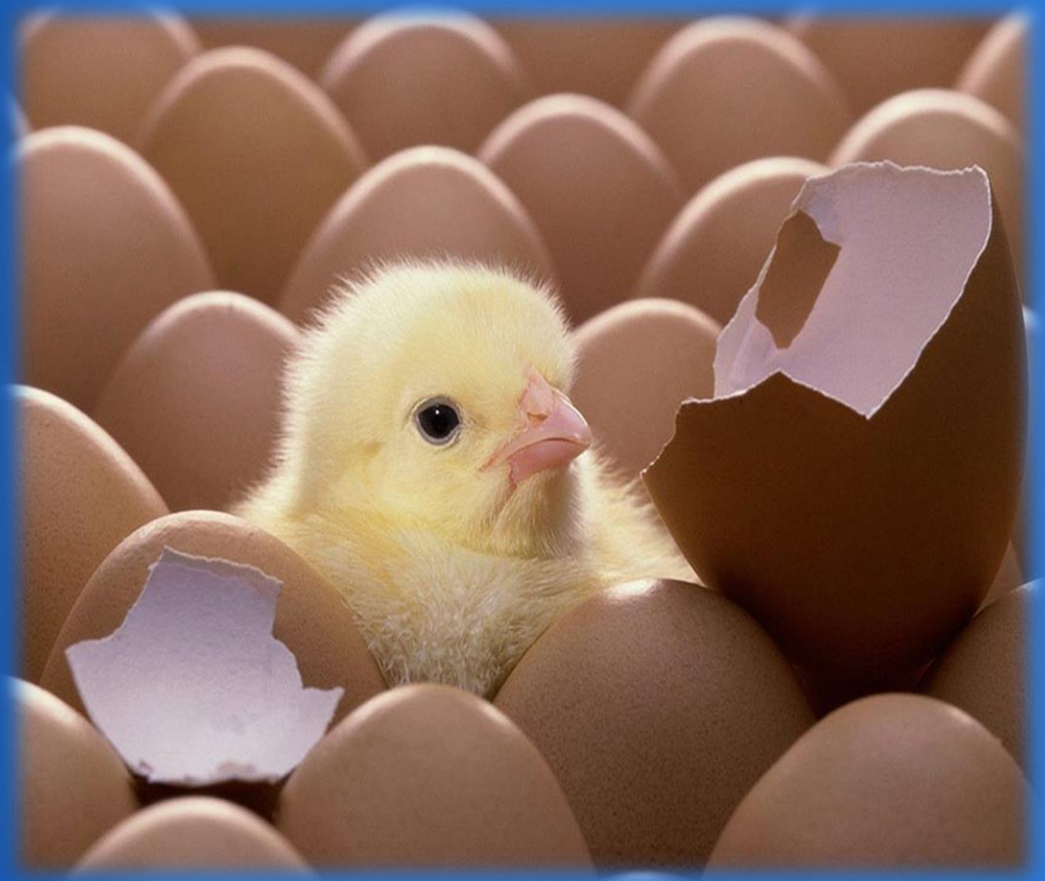
Thank you



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