

# Managing Bodyweight in Female Turkey Breeders: Effects on Growth and Egg Production

## Welcome

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*Nicholas*  
B.U.T.

**Together, we breed success**



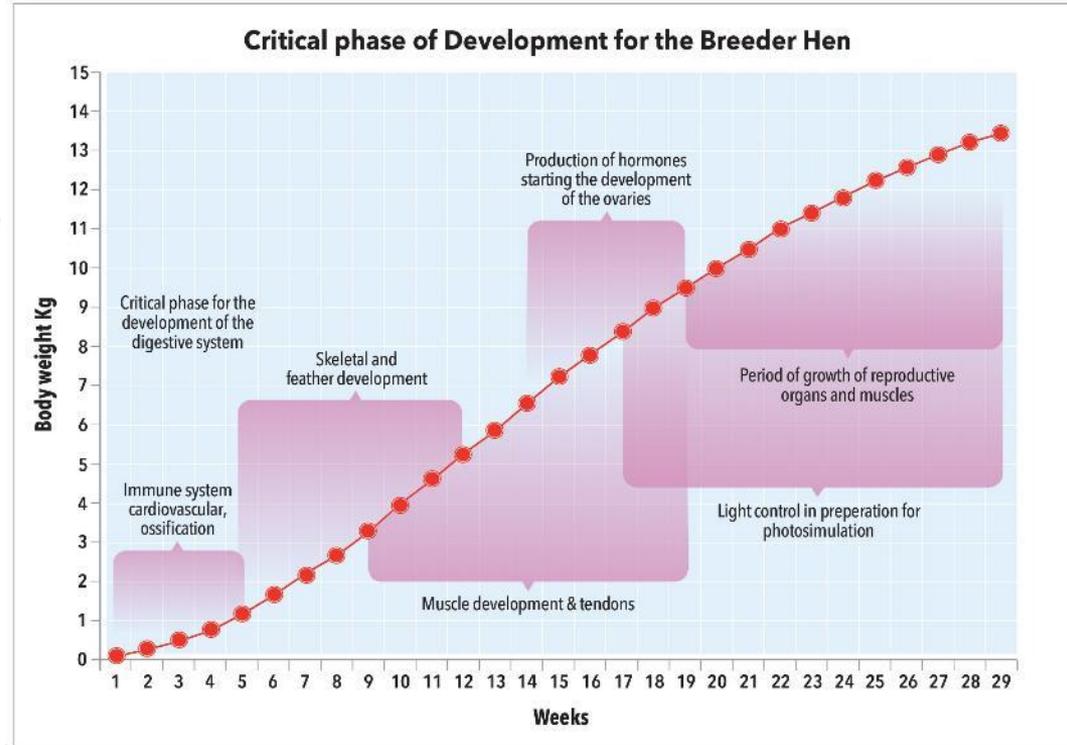
# Topics

- How early management is shaping lifetime performance
- Volatile growth curves and its ability to disrupt reproductive performance
- Practical management to achieve consistent growth



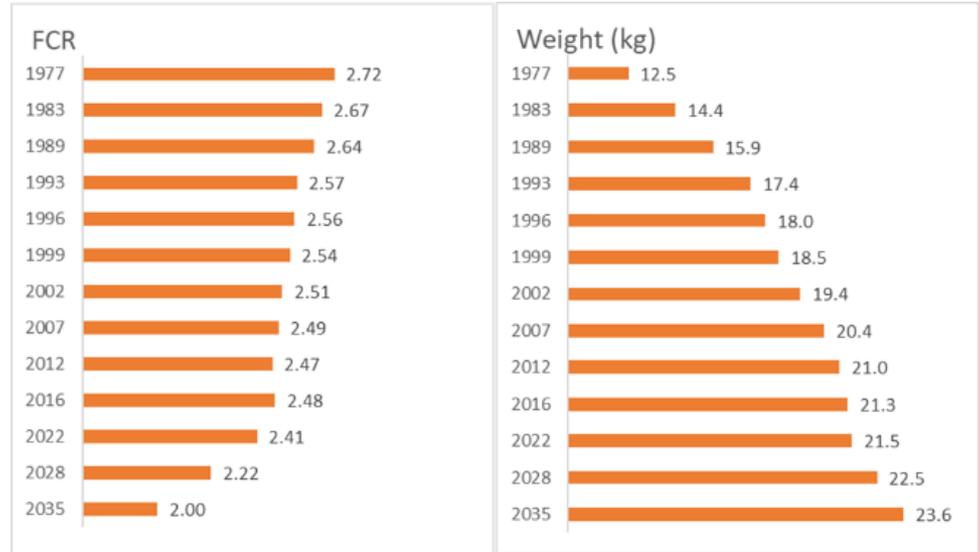
# The Critical First weeks

- Early bodyweight development establishes the metabolic and physiological trajectory for the rest of the rearing period and therefore determines reproductive success
- Acquiring the required body weight and conditioning prior to lay is reliant on achieving certain key physiological 'events' through the rearing period



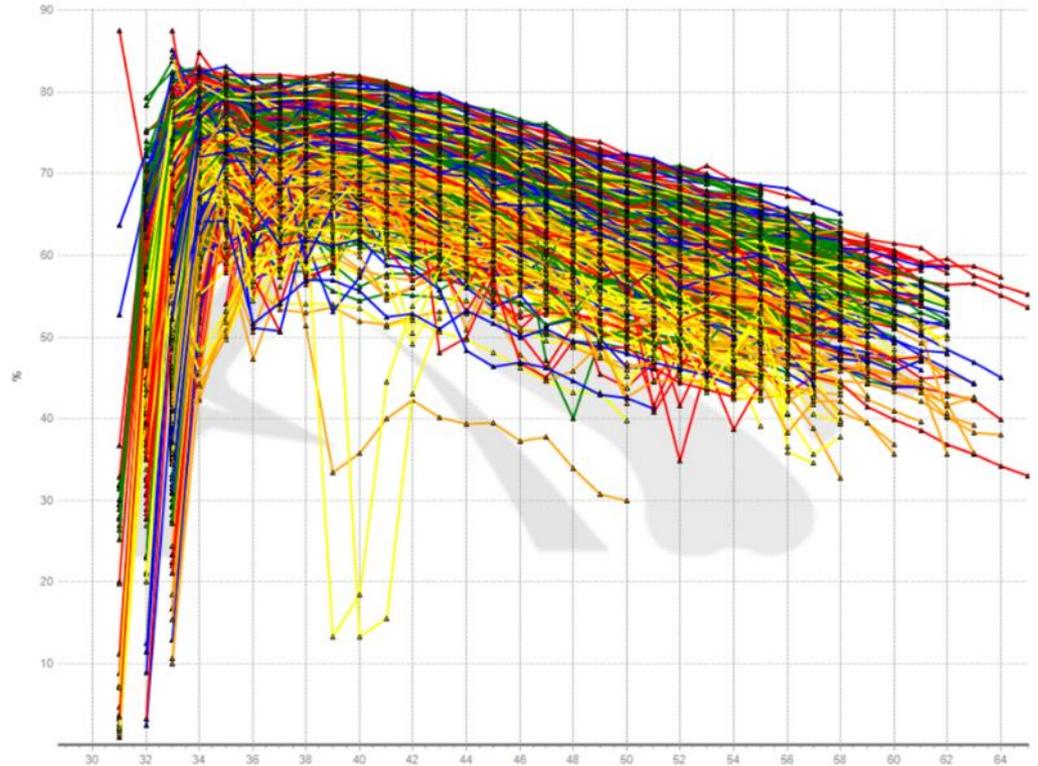
# Epigenetic Lock-In

- Early rapid growth stimulates a greater number of satellite cells
- Permanently setting the bird's structural integrity and metabolic capacity
- These permanent changes in gene expression can resist later management interventions



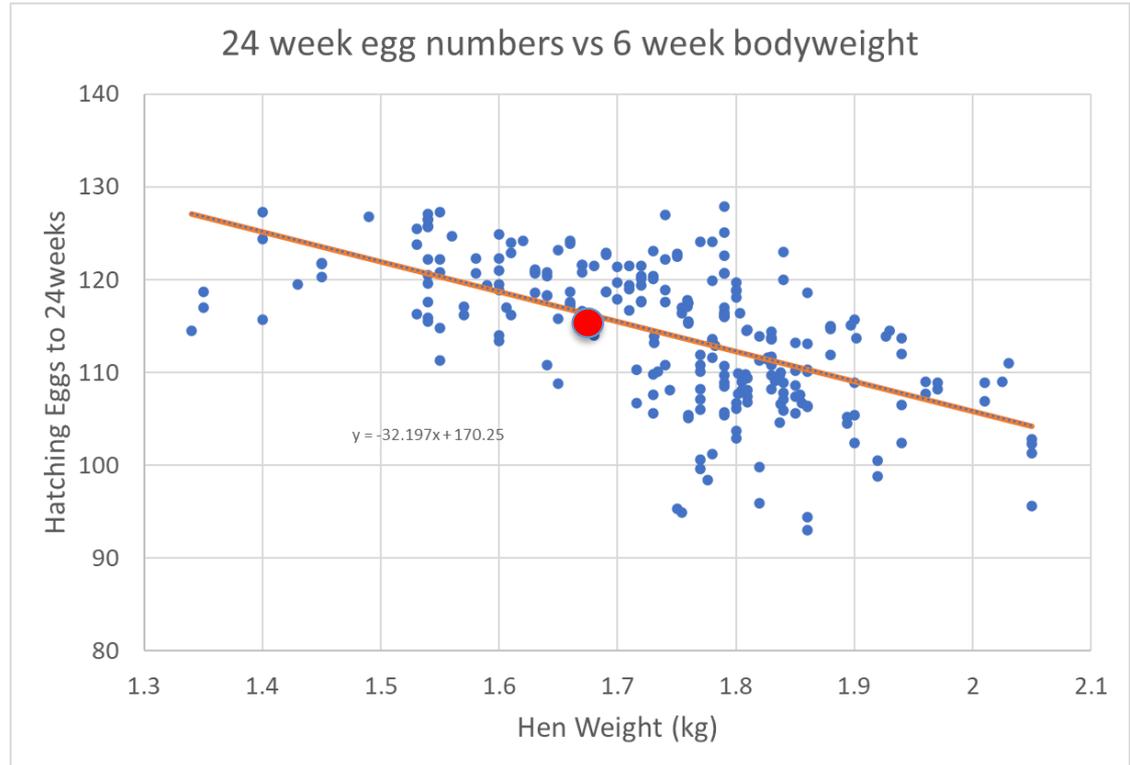
# Calculating the Evidence

- Flock data from 2020–2025
- Analysed 238 individual flocks
- Multiple countries & companies



# Calculating the Evidence

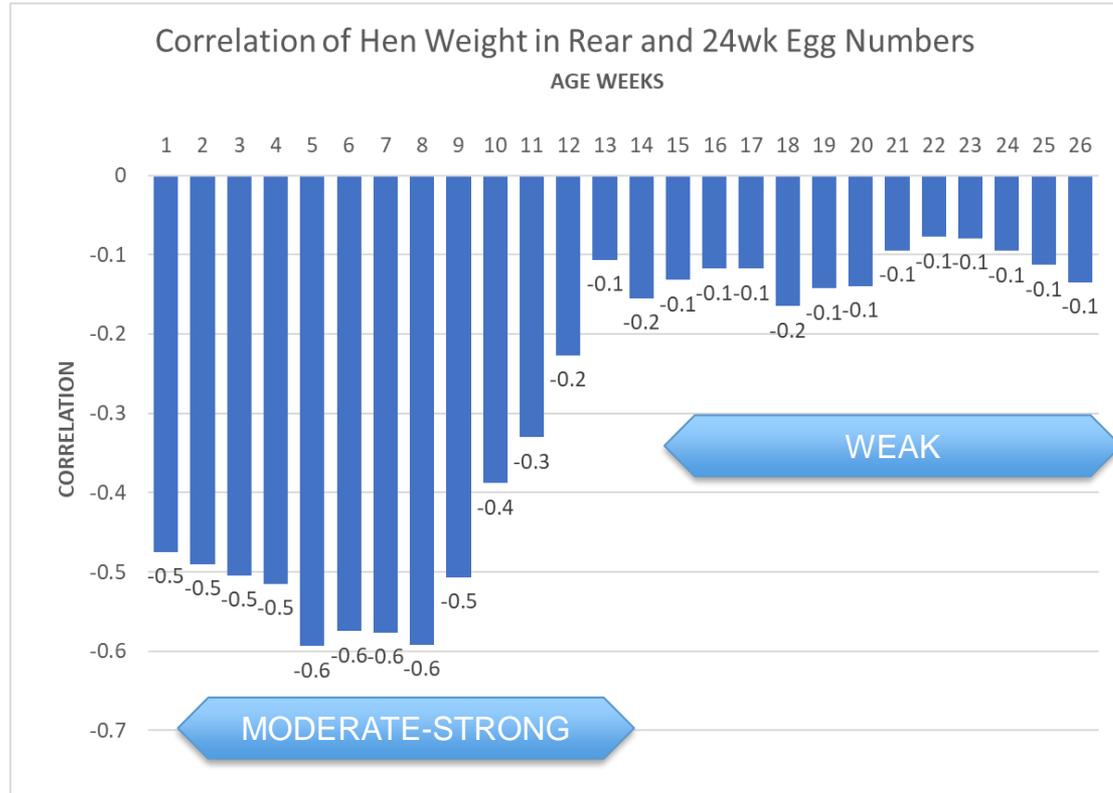
- Regression between 24 week egg production and hen weight at each age
- For example – at 6 weeks
  - every +100g, relates to a loss of 3.2 eggs per bird



# Benefits of Managing Early Growth

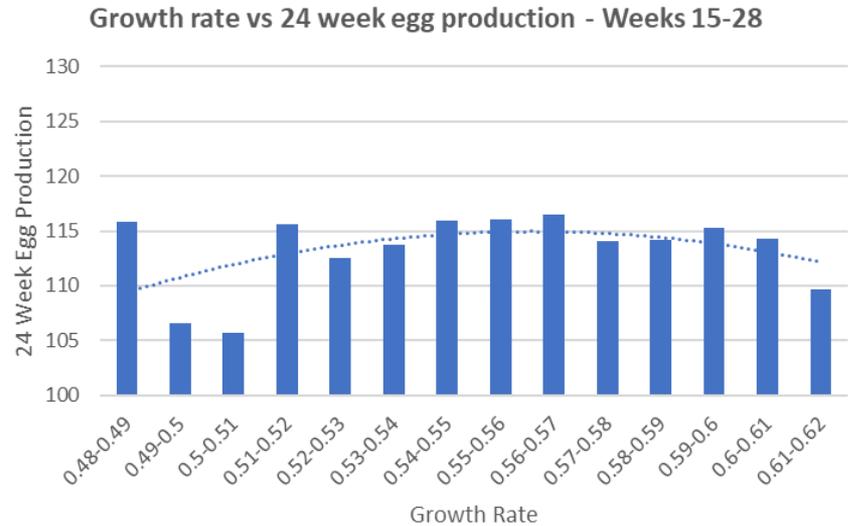
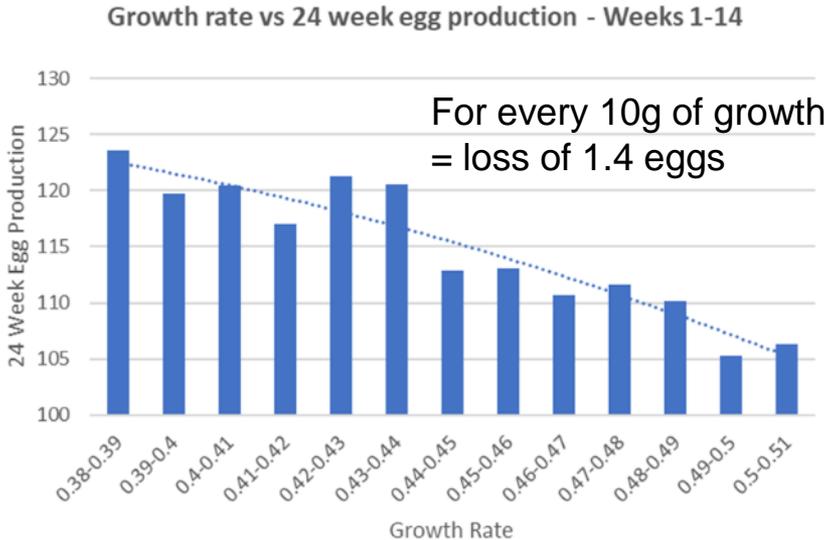
- First 10 weeks

- Moderate to strong significant negative correlation between bodyweight and egg numbers
- Lower bodyweights relate to better egg production



# Benefits of Managing Early Growth

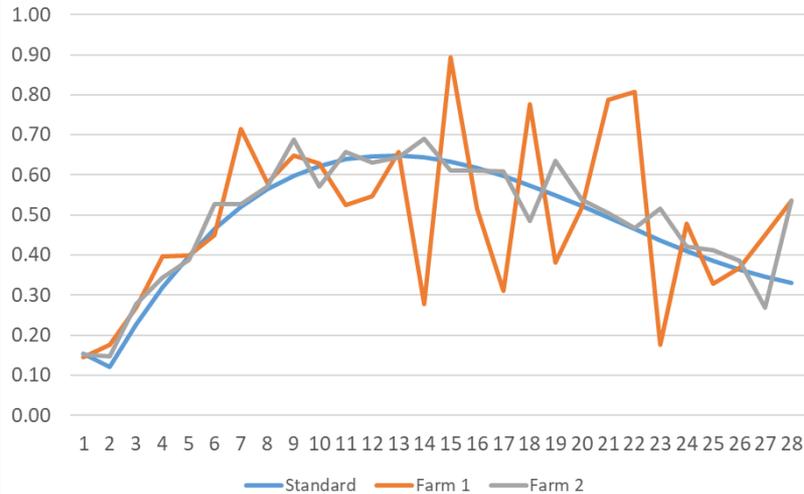
- Slower growth in the early rearing period produce more eggs at 24 weeks



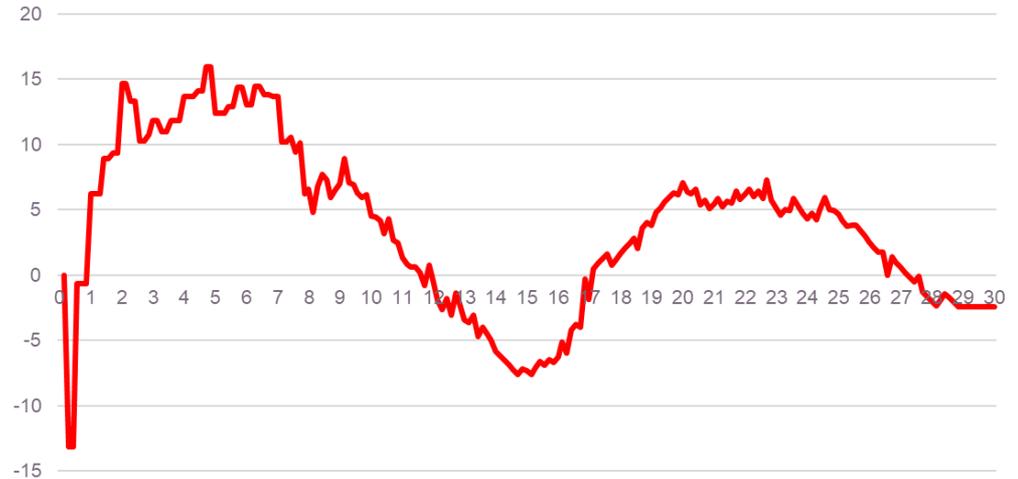
# Shark-Toothing

- Rapid early gain followed by forced constraint
- Disrupts hormonal signals critical for reproductive tract development

Female Bodyweight (weekly growth kg)



Growth Management In Rear: Female Bodyweight (% of standard)



# Uniformity Matters

- Consistent, controlled growth delivers better uniformity, synchronised responses to photostimulation, and peak production
- Uniformity is a critical factor for flock performance
- More synchronised response to light stimulation in uniform flocks
- Synchronised response = higher peak production and persistency in lay
- Poorer uniformity = staggered onset of lay, lower peak production



# Rearing Management

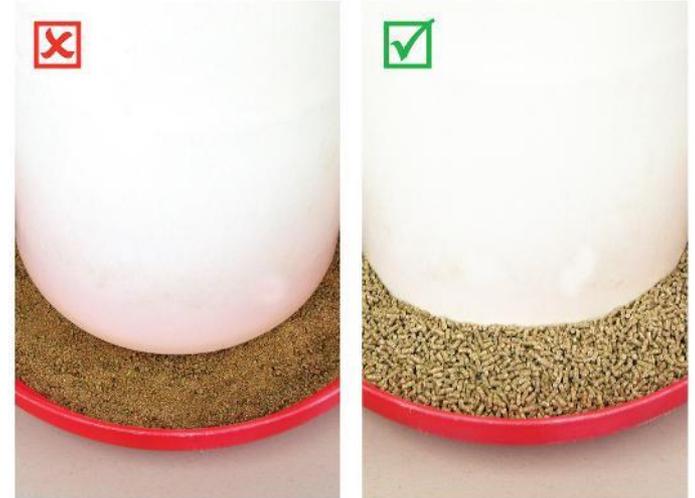
# Feed Quality Matters

- Consistent feed form, with a high proportion of uniform particles, supports consistent feed intake across the population
- Lessens the development of dominant birds that select preferred particles sizes leaving less favourable fine particles for subordinate birds
- Less selective feeding resulting in more even growth and better uniformity
- High-quality, consistent feed form supports efficient nutrient intake
- Consistent quality pellets or crumbs = equal opportunity for all birds



# Feed Management

- The level of fines should not be allowed to accumulate
- As a management tool, it can be useful to switch off the feeder line for a short period twice a week to encourage the turkeys to clean down the pans
- The turkeys should never be left without any feed available for longer than 1 hour
- A gradual transition between two sequential diets can be achieved by mixing the two rations together for 1-2 days



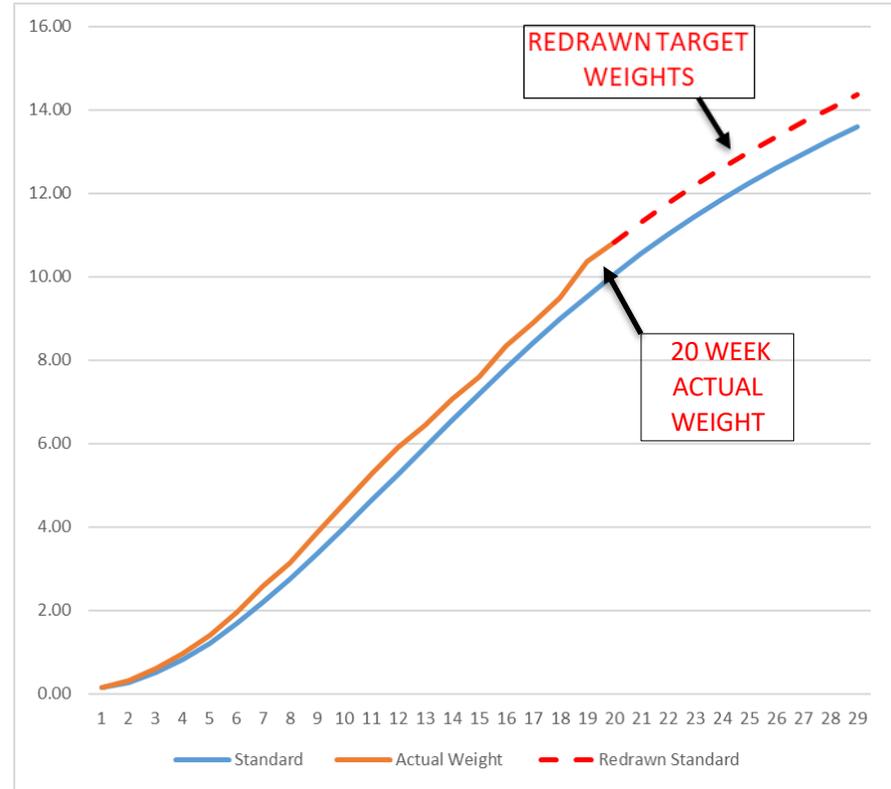
# Monitor and Adapt

- Weigh a sufficient sample of birds each week (2%)
- If on target or within +/- 5% of target stay with the standard feed programme
- If > +/- 5% modify feed programme
- React to trends, remember time lag between feed ordering and consumption
- Don't make changes that are too severe
- Use holding diet if necessary

Age Days	Actual Weight	Standard % of		Instruction
		Weight	Target	
0		0.00	#N/A	#N/A
7	0.14	0.15	90%	STAY ON HIGHER PROTEIN FOR LONGER
14	0.25	0.27	93%	CONSIDER CHANGE BASED ON NEXT WEIGHING
21	0.48	0.50	96%	NO CHANGE NEEDED
28	0.73	0.82	89%	STAY ON HIGHER PROTEIN FOR LONGER
35	1.17	1.22	96%	NO CHANGE NEEDED
42	1.65	1.68	98%	NO CHANGE NEEDED
49	2.18	2.20	99%	NO CHANGE NEEDED
56	2.70	2.76	98%	NO CHANGE NEEDED
63	3.27	3.36	97%	NO CHANGE NEEDED
70	3.75	3.98	94%	CONSIDER CHANGE BASED ON NEXT WEIGHING
77	4.15	4.62	90%	STAY ON HIGHER PROTEIN FOR LONGER
84	4.92	5.27	93%	CONSIDER CHANGE BASED ON NEXT WEIGHING
91	5.55	5.92	94%	CONSIDER CHANGE BASED ON NEXT WEIGHING
98	6.32	6.56	96%	NO CHANGE NEEDED
105	6.99	7.19	97%	NO CHANGE NEEDED
112	7.62	7.81	98%	NO CHANGE NEEDED
119	8.24	8.41	98%	NO CHANGE NEEDED
126	8.94	8.98	100%	NO CHANGE NEEDED
133	9.85	9.53	103%	NO CHANGE NEEDED
140	10.70	10.05	106%	CONSIDER CHANGE BASED ON NEXT WEIGHING
147	11.35	10.55	108%	CHANGE TO LOWER PROTEIN DIET SOONER
154	11.90	11.01	108%	CHANGE TO LOWER PROTEIN DIET SOONER
161	12.00	11.45	105%	NO CHANGE NEEDED
168	12.11	11.86	102%	NO CHANGE NEEDED
175	12.17	12.24	99%	NO CHANGE NEEDED
182	12.52	12.61	99%	NO CHANGE NEEDED
189	12.85	12.95	99%	NO CHANGE NEEDED
196	13.17	13.28	99%	NO CHANGE NEEDED
203	13.51	13.60	99%	NO CHANGE NEEDED

# Repositioning the Target

- For overweight flocks, accept the higher baseline and plot a parallel growth trajectory rather than forcing weight reduction to standard so close to photo stimulation
- Aggressive feed changes close to the stimulation period are harmful to productivity
- Plot recalibrated growth trajectory parallel to standard curve
- Supports bird's physiological transition without imposing weight-loss stress



# The Conditioning Phase

- Feed or weight restriction in the 20-29 week period before photostimulation damages physiological transitions critical for reproduction
- Bird undergoing significant physiological transitions preparing for reproduction
  - Reproductive tract development occurring during this phase
  - Hormonals changing for onset of lay in progress
- Avoid any restriction during this window
- Restrictions = metabolic stress damaging reproductive readiness



# Housing Environment

- Feeder space: Overcrowding at feeders marginalises smaller birds, widens weight distribution
- Ventilation: Poor air quality diverts energy from growth to thermoregulation
- Thermal stress (heat and cold): Disrupts growth trajectory, increases flock variability
- Each factor creates competition, stress, or energy diversion
- Environmental control directly supports consistent growth and uniformity



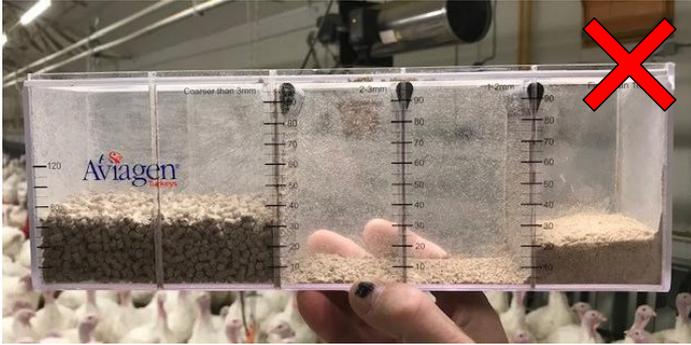
# Rearing Management

## Feeders

- Ensure good-quality feed is available to the birds throughout life
- Provide a minimum of one feed pan per 60–80 females which allows at least 2cm of feeding space per female
- Maintain the feed pan so that the feeder lip is at the average bird back height



# Field Examples



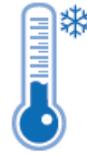
# Ventilation

**Uniform ventilation = uniform spread**

**Uniform spread ensures efficient use of feeders and drinkers, keeping competition down**

**Key points:**

- Seal cracks and areas where air can leak in, causing draughts and heat loss
- Adjust ventilation to provide the minimum air renewal
- Open inlets evenly



## **Environment too cold:**

Birds huddle together or under heat source, and may be noisy and distress-calling, showing that they are cold.



### **Action**

Increase temperature

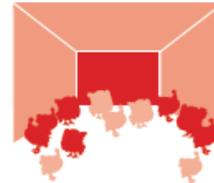


## **Environment correct:**

Birds are spread evenly and noise signifies contentment, showing that they are at the correct temperature.

### **Action**

No action required



## **Environment too hot:**

Birds move away from heat source, are quiet and pant, and head and wings droop, showing that they are hot.



### **Action**

Decrease temperature

# Field Examples



# Temperature

- Ensure birds are within their “comfort zone”
- In cold climates, pre-heating of as much as 48 – 72 hours may be required
- Litter temperature is a good indicator of adequate pre-heating
- After delivery and throughout their life, behavior is a key indicator of whether the environment inside the house is correct
- Temperature should be measured at bird level



✓ **Temperature Correct**  
Poults evenly spread  
Noise level indicates contentment



✗ **Temperature Too High**  
Poults away from brooder  
Poults make no noise  
Poults pant, heads and wings droop

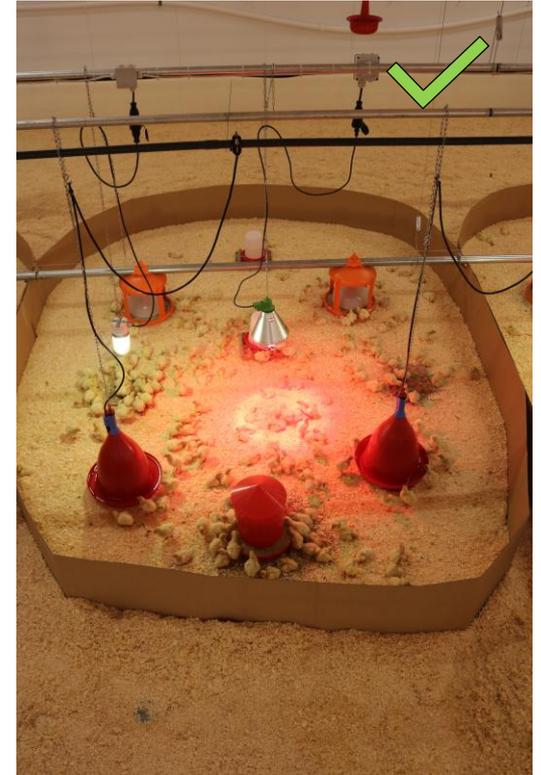


✗ **Temperature Too Low**  
Poults crowd to brooder  
Poults noisy, distress calling



✗ **Draft**  
Poults move to avoid draft  
Poults noisy, distress calling

# Field Examples



# Summary

- Shift the goal to ensuring a smooth consistent growth pattern by ensuring the early stage of rear sees controlled growth
- All management strategies work together to achieve this single outcome
- Modern turkey demands active, integrated rearing management
- Get in touch with the management specialists at Aviagen turkeys we are always happy to help

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# Thank you

## Have a great day!

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