

Reimagining the Ways We Deliver Nutrients to Broilers and Breeders

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House of Raeford

2026 AF&GA Nutrition Seminar

April 30th, 2026

**HOUSE OF
RAEFORD**

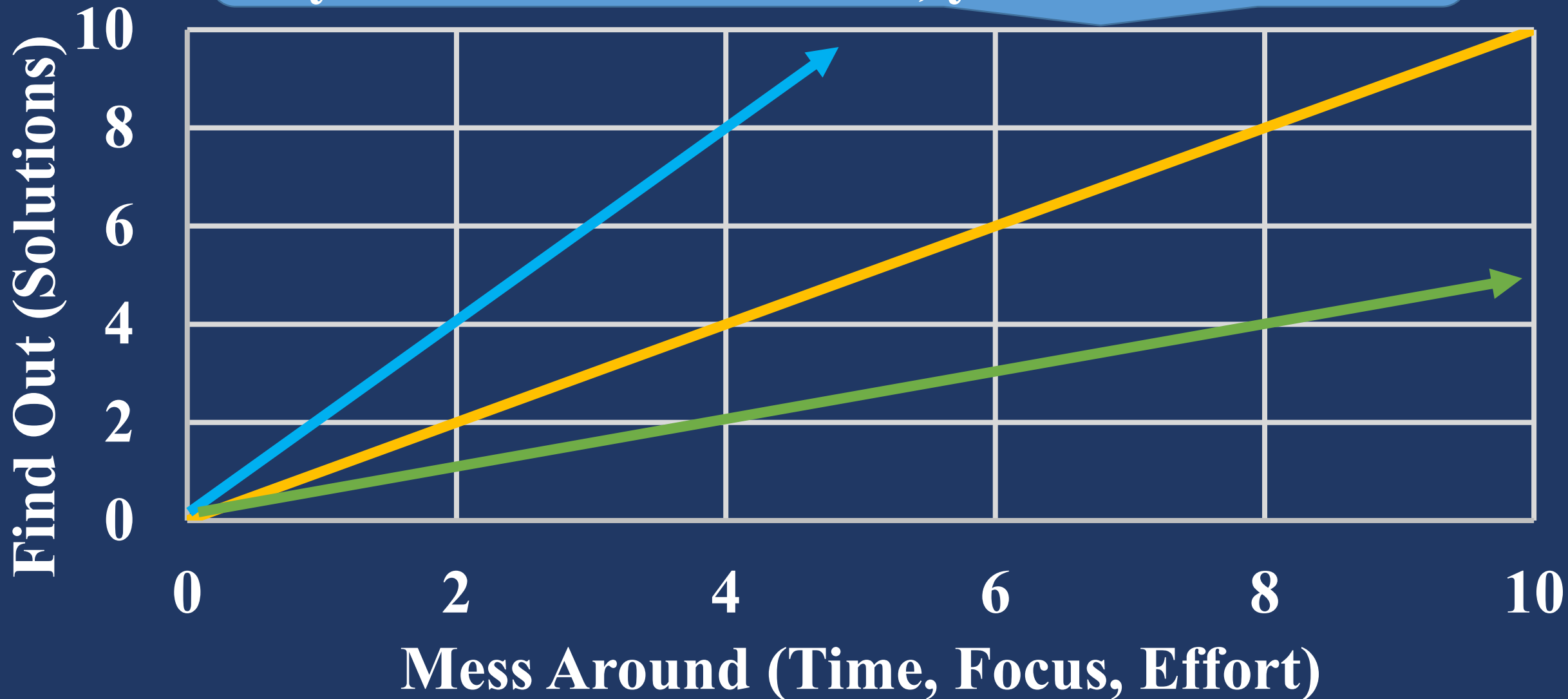
NUTRITION RESEARCH



Three Laws of The Chicken Business

1. **We can't count chickens**
2. **Dead hens and pullets don't lay eggs**
3. **Chickens that don't eat don't grow**

**Zero Intercept Equation:
If you never mess around, you never find out**



House of Raeford

- **Family owned and operated; based in North Carolina**
- **Large Bird Deboner – 9.5 + lb. live weight 100% NAE**
- **Six processing plants → ~ 5 million broilers/week**
- **Five feed mills → ~ 50,000 tons weekly**



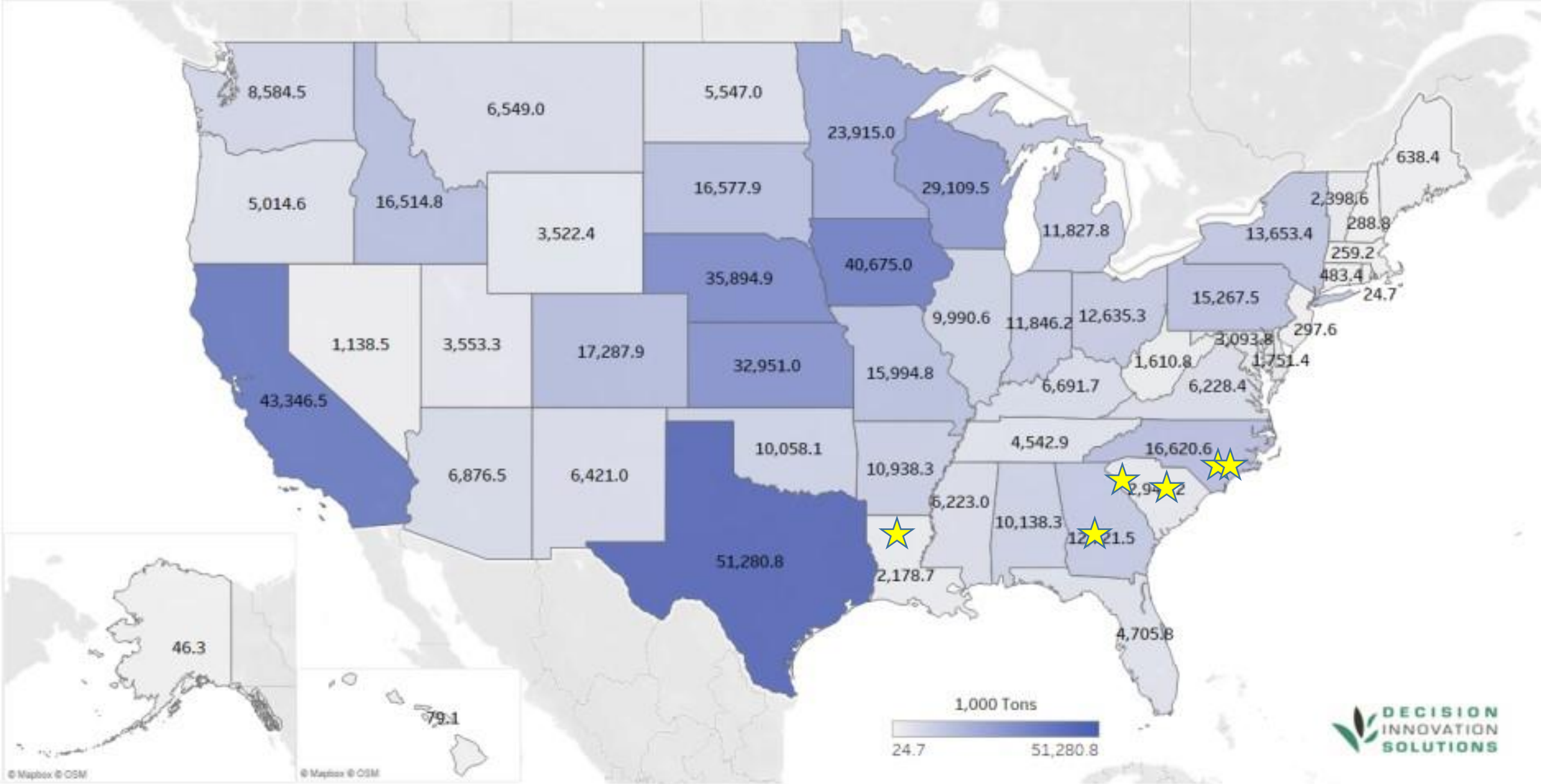


Figure 19. 2023 Total Animal Feed Consumed (in 1,000 Tons) by State



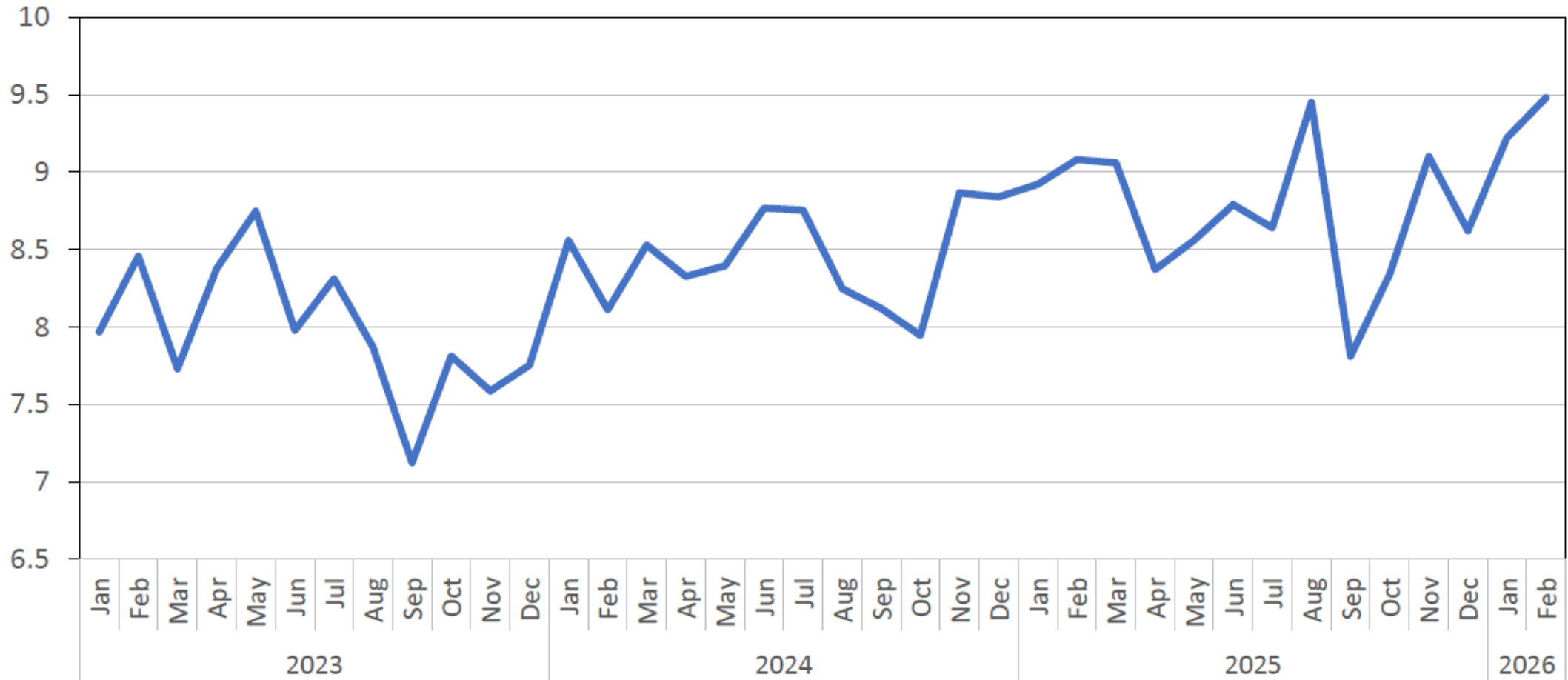
Benton Asks...

What keeps you awake at night?

Why do you need a notepad on the nightstand?

Living on The Edge

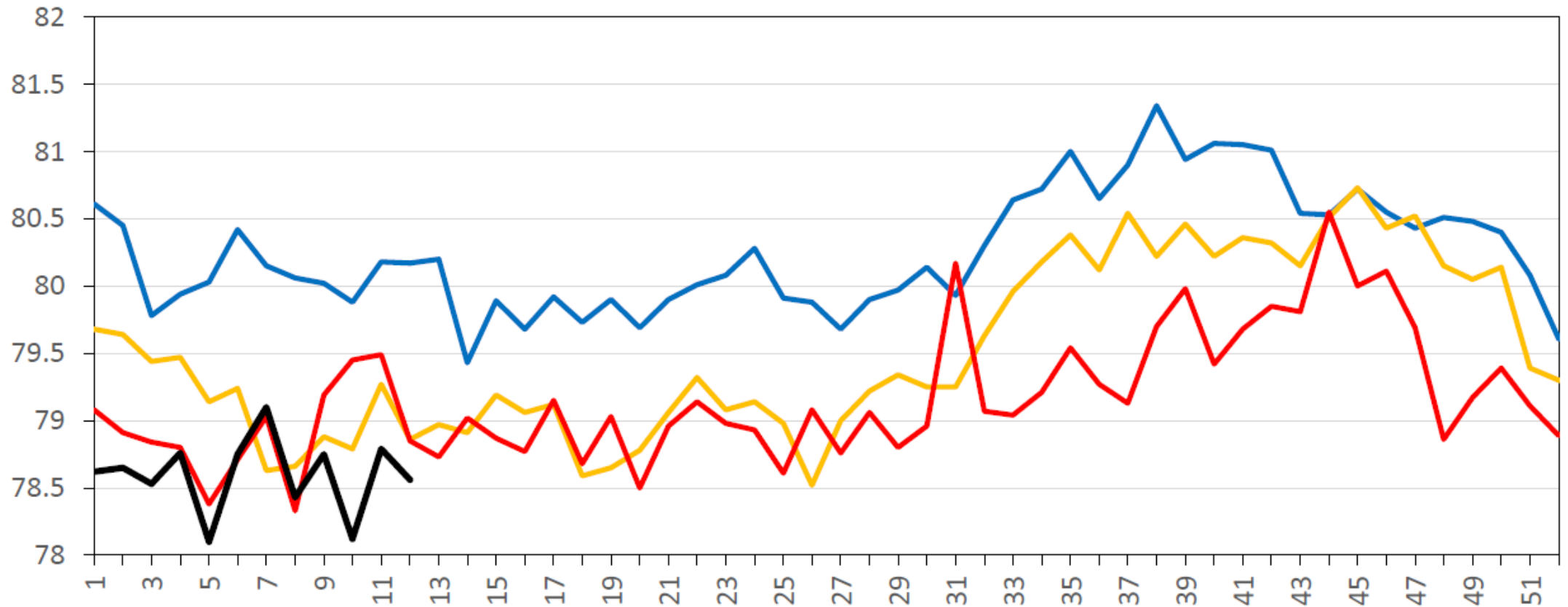
US Pullet Mortality at Capitalization



Living on The Edge

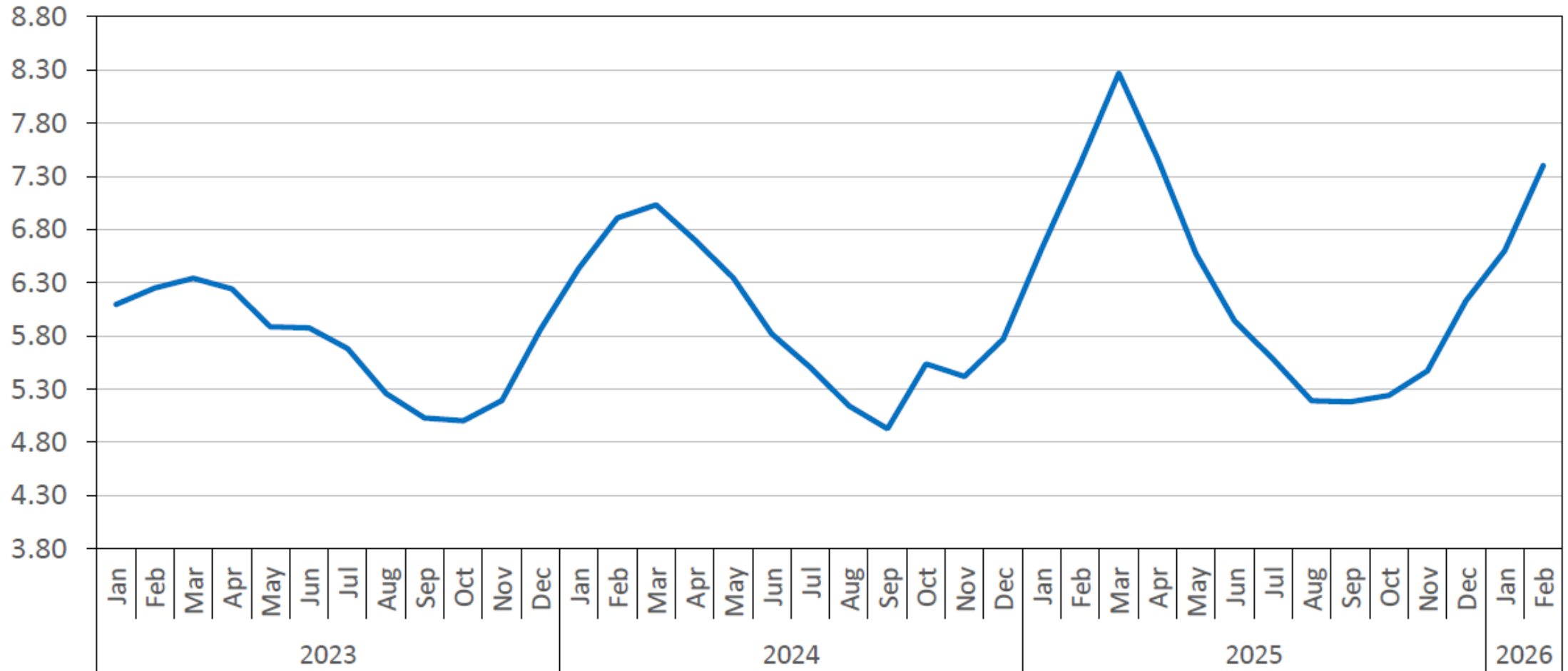
Average Hatchability Adjusted to 45 Weeks of Age Full Year

— 2023 — 2024 — 2025 — 2026



Living on The Edge

Average Total Broiler Mortality %



Is Nutrition the Problem?

Nope

**However, I am convinced that we can improve
the way we present or deliver nutrients**

Plan of Deception So You Agree

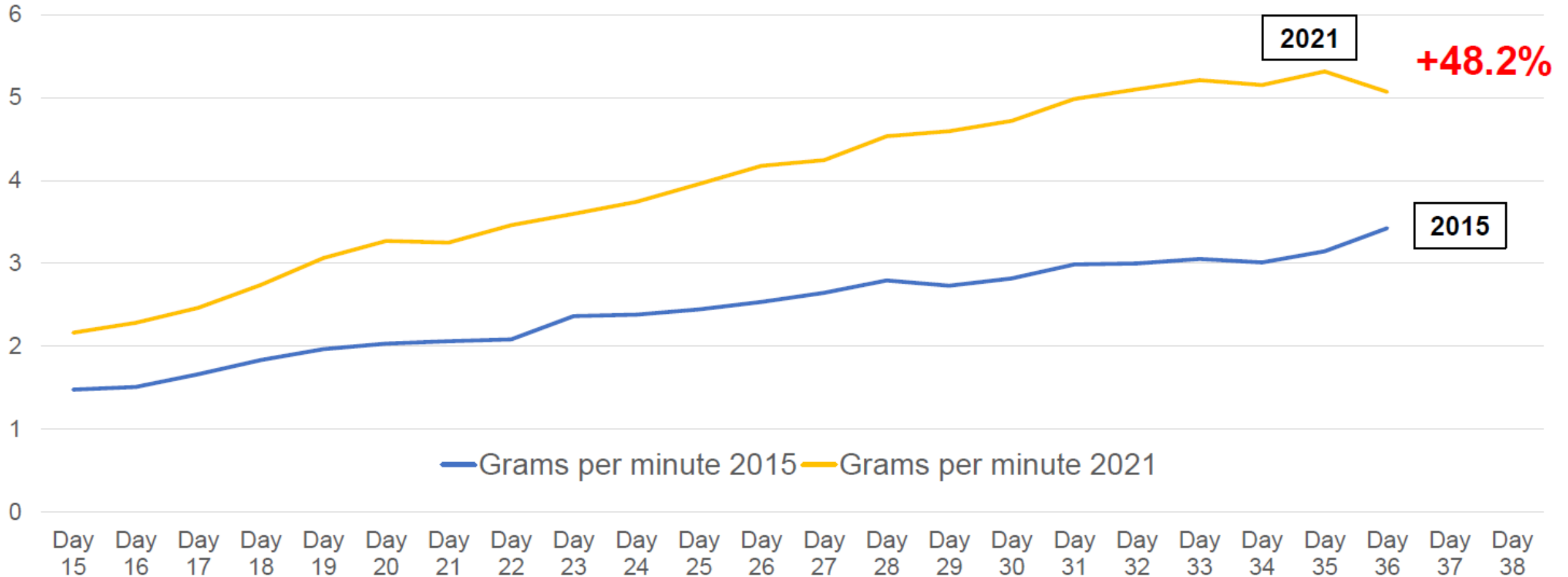
- **Pullets and Breeders**
 1. Presentation Feeding
 2. Roller Mill
 3. Grading
- **Broilers**
 1. Flood Transition
 2. Precision Blending
 3. Chick Sorting

Pullets and Breeders

Most Breeder Issues on One Slide

Pedigree Line 2015-2021

Feed Consumption Rate



Variation in Feed Consumption

Target
Skip → 0.212 lbs
270 kcal
14 g protein

-20%
Skip → 0.170 lbs
216 kcal
11.2 g protein

Difference
0.042 lbs
54 kcal
2.8 g protein

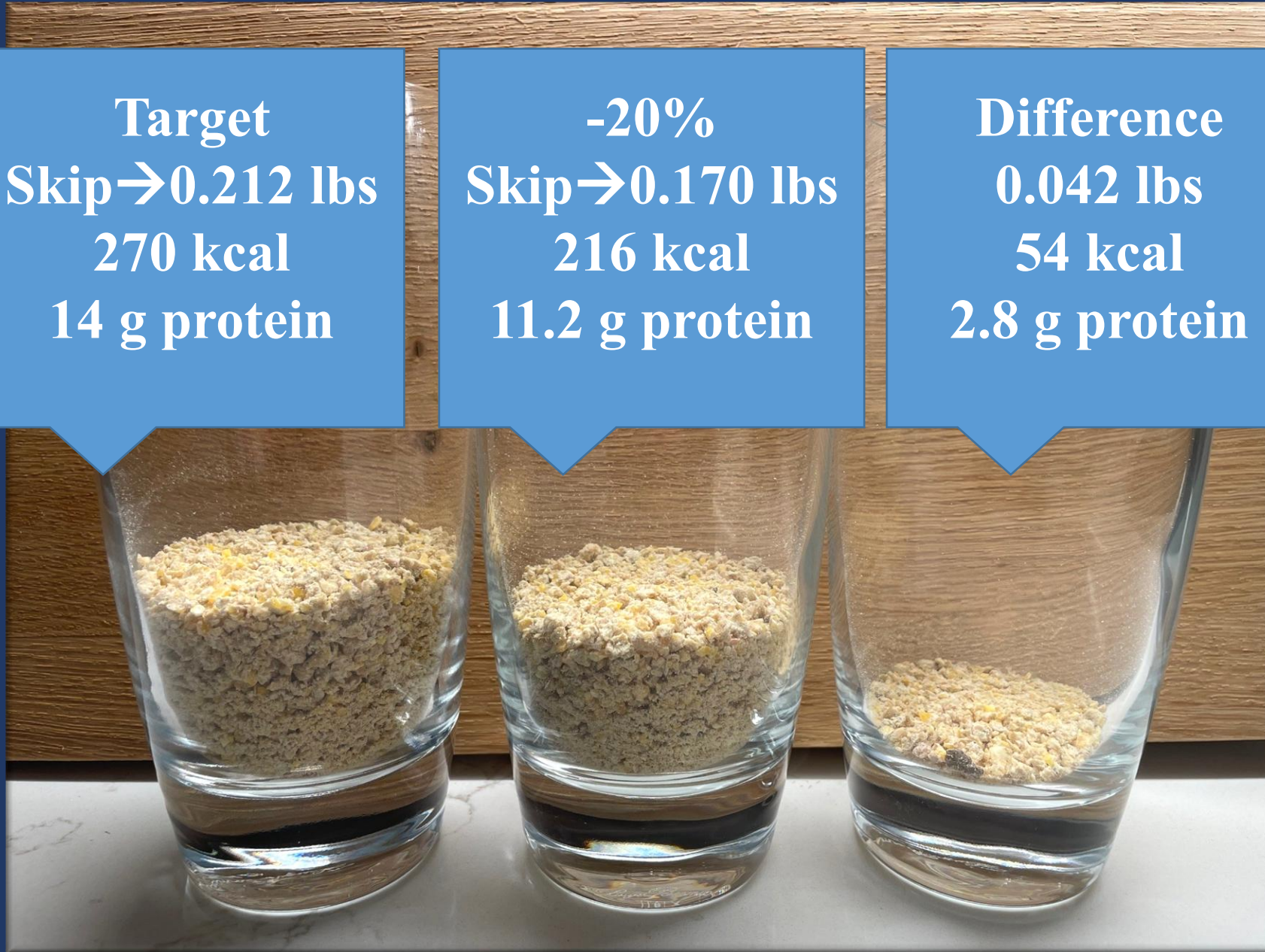
Aviagen

10.6 lbs/100

1271 kcal

14.5% CP

10 weeks



Formulation Can't Fix This

What diet did this pullet consume?
1017 kcal/lb
11.6% protein

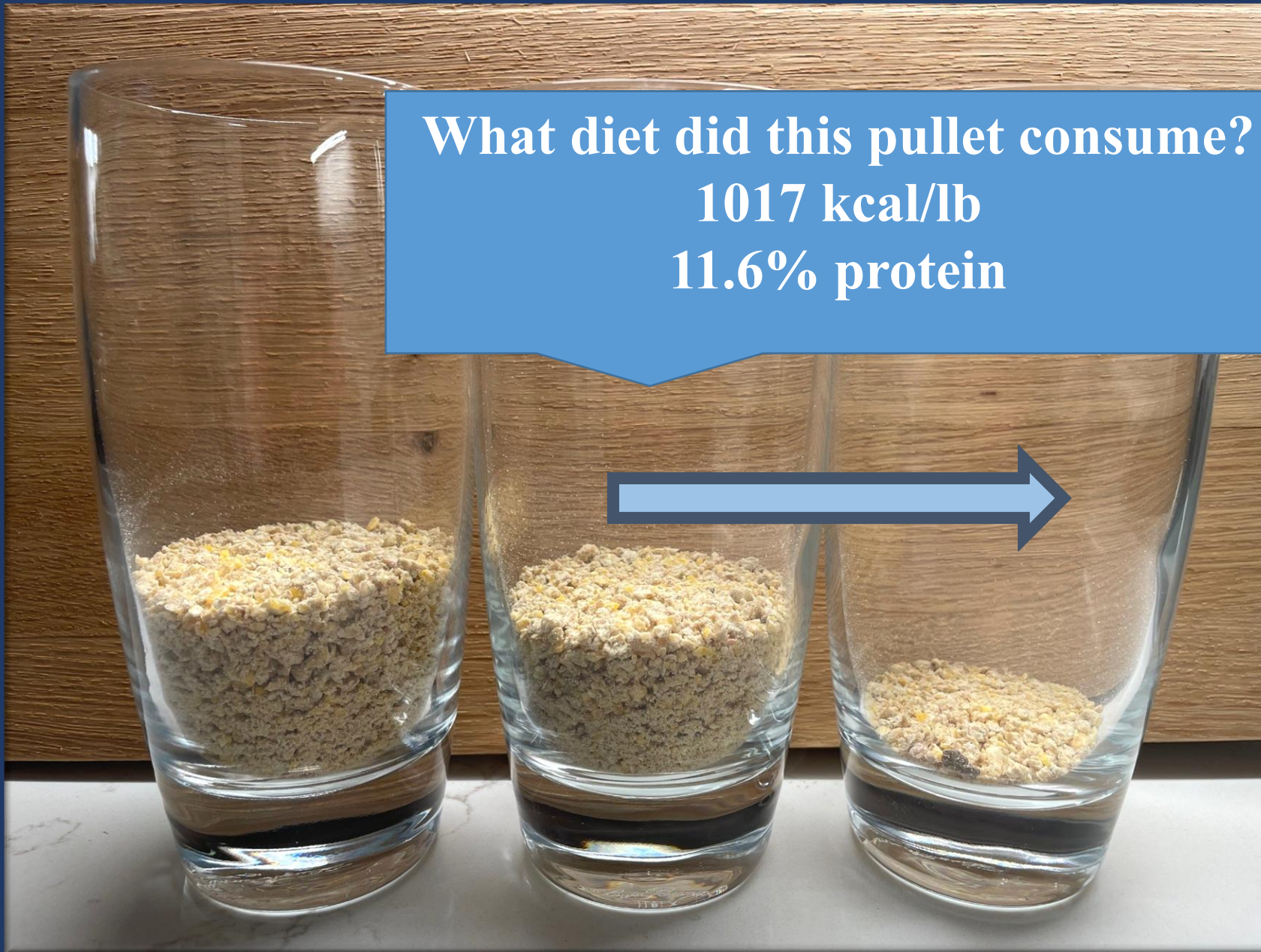
Aviagen

10.6 lbs/100

1271 kcal

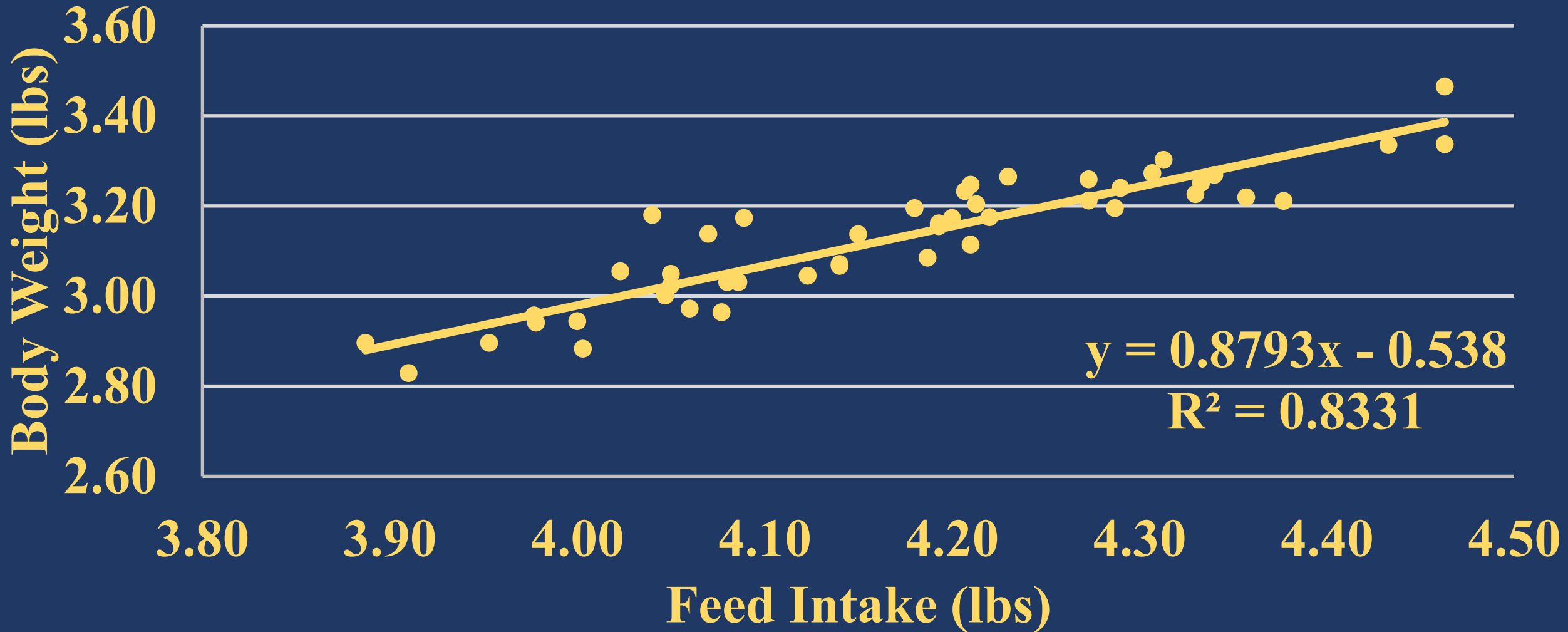
14.5% CP

10 weeks



Chickens That Don't Eat Don't Grow

28d Feed Intake and Body Weight



Pullets and Breeders

1. Presentation Feeding

Typical Feeding



Standard Feeding is Too Complicated

- **We must maintain:**
 - Line charge, limit switches, and motors
- **What it doesn't do:**
 - Provide equal opportunity for feed consumption
 - The proverbial pullet racetrack
- **Let's mess around with presentation feeding:**
 - All feed is in place before pullets can consume feed
 - Buffet vs. plated service

Pullets and Breeders

2. Roller Mill

Uniform Particles for Uniform Birds

- **Many pullets are fed crumbles**
 - Flowability is great
 - However, we have compressed our nutrients for a bird that consumes feed too quickly
- **Hammermill**
 - Roller mill work around, but produces too many fines and has flowability issues at times

Uniform Particles for Uniform Birds

- A bit of crude math on the subject of compression

	Ingredient	Proportion (%)	Mash (lbs/ft3)	Crumble (lbs/ft3)
	Corn	62.0	35	42
	SBM	15.0	40	48
	Fat	0.5	55	55
	Minerals	2.5	62	62
	Midds	20	15	18
	Diet		32.5	38.7
Volume Equivalent			2000 lbs	2378 lbs
Density Equivalent	Corn	36.5		
	Midds	45.5		
	Diet		27.4	32.5

Uniform Particles for Uniform Birds



Pullets and Breeders

3. Grading

We Don't Have Labor

- **We have heard this for years**
 - If I may...
 - What we don't have are enough chickens because our hatcheries are full and plants are empty
- **Labor cannot be our crutch in dire situations**
 - We need to sort and grade to ensure flock uniformity, thus persistency and fertility, so that our processors can operate

Grading

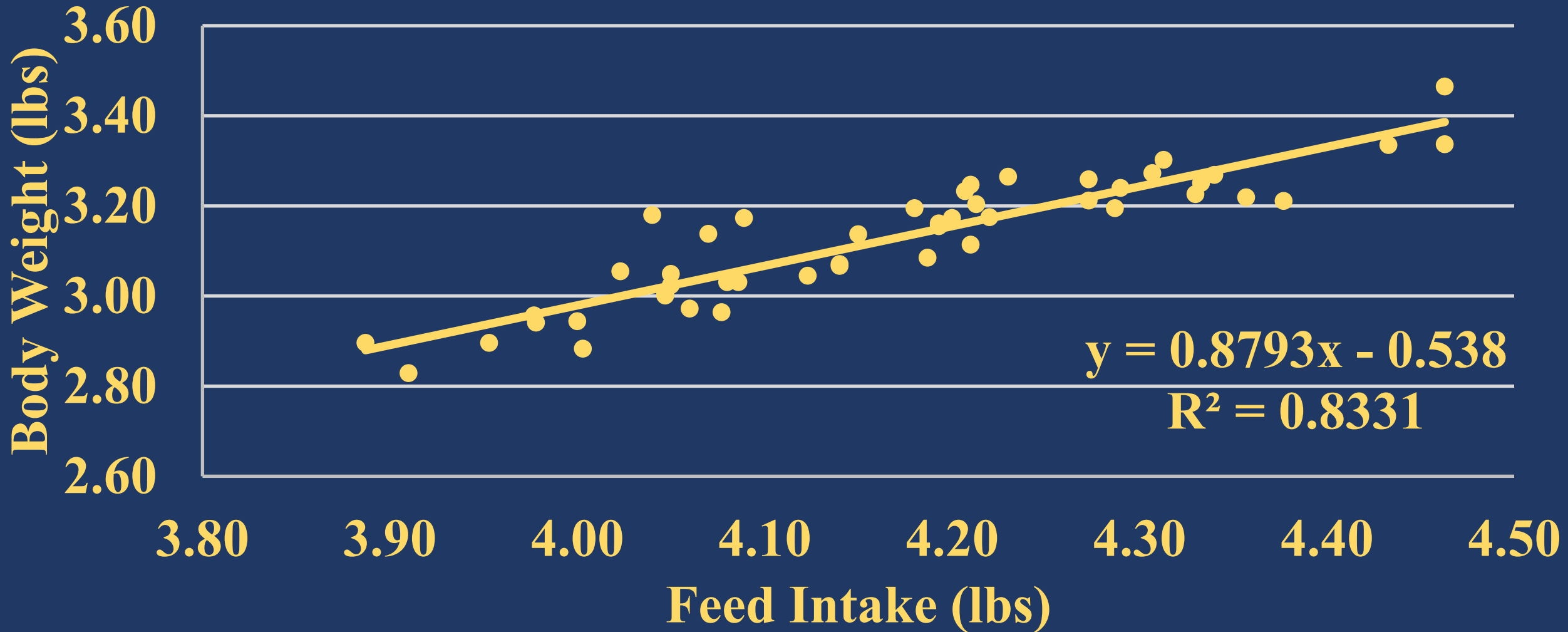
- **4,730 males**

Grading	Number	BW	Uniformity	CV
Before	4730	2.42	85.5%	10.8
Light	2365	2.22	96.2%	6.9
Heavy	2365	2.63	96.9%	6.7

Separating the fast and slow consumers

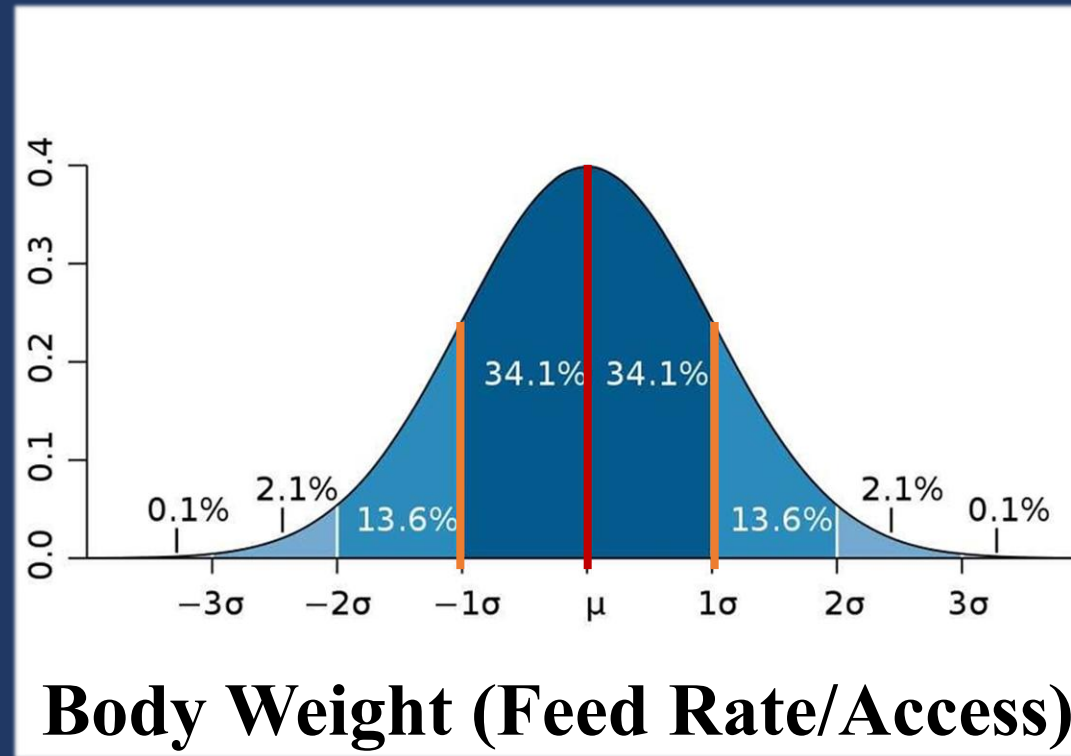
Chickens That Don't Eat Don't Grow

28d Feed Intake and Body Weight



What Has Sorting Done?

- **We have separated the fast and slow consumers**



- **We need more than two groups to sort properly**

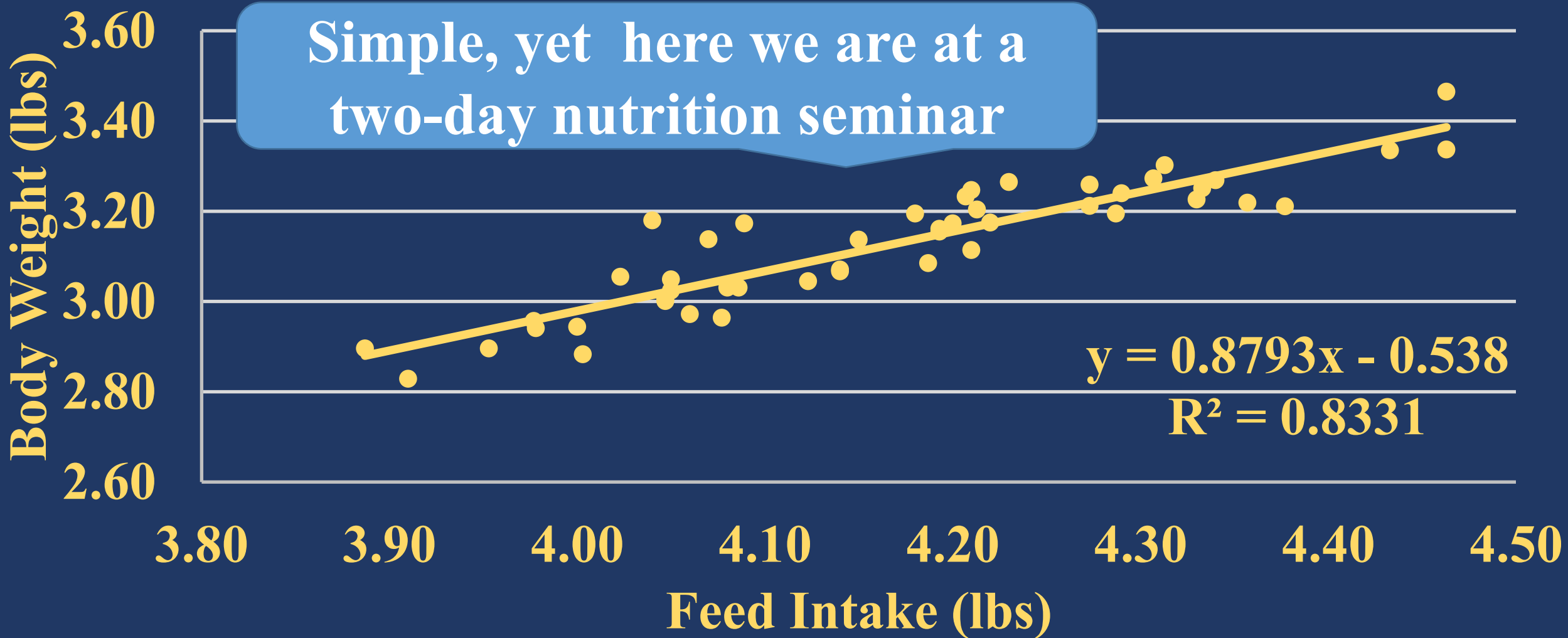
Pullets and Breeders

- **The formula isn't the problem**
- **We should be focused on delivering nutrients more consistently to the correct population**
- **We can improve nutrient delivery with:**
 - **Presentation feeding**
 - **Feed decompression and consistency**
 - **Graded populations with similar feed drive**
- **The alternative is more pullets and larger hatcheries**

Broilers

Chickens That Don't Eat Don't Grow

28d Feed Intake and Body Weight



Can We Formulate Our Way Around This?

- Another crude table to explain... not really

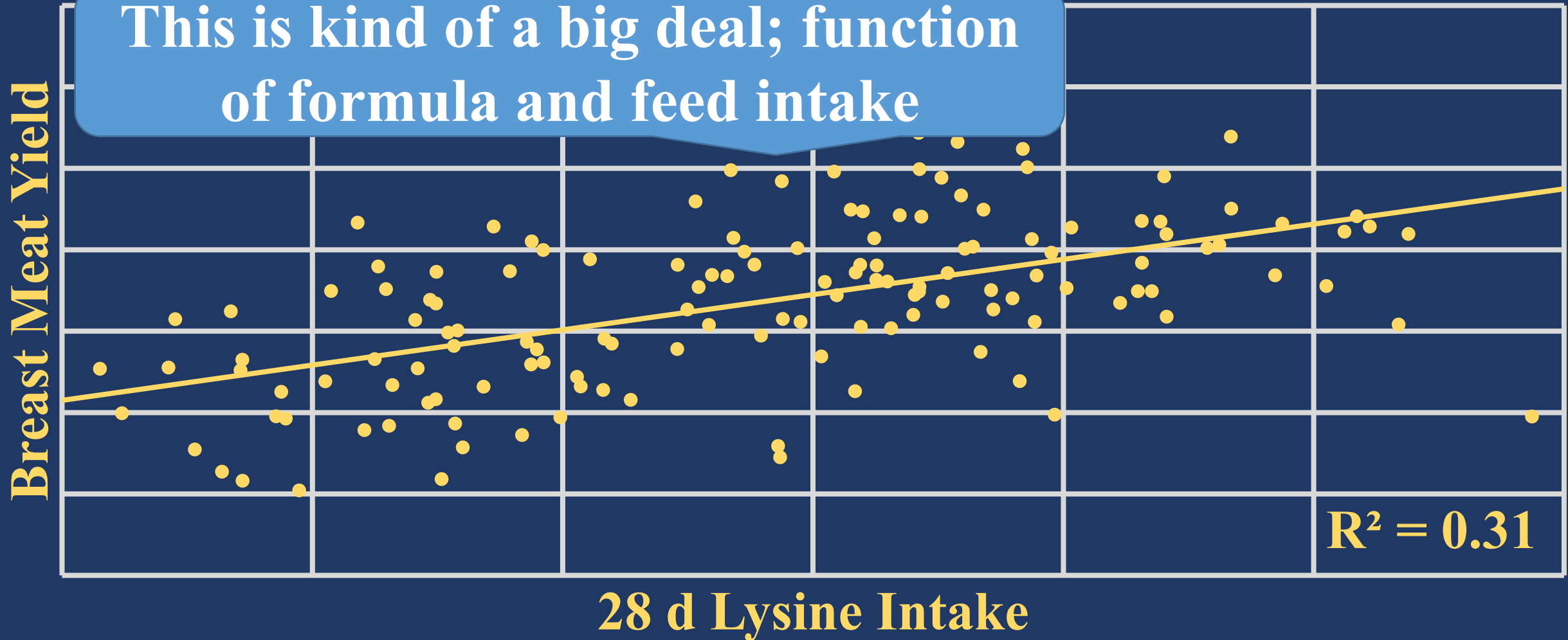
		Feed Intake	Starter Intake (lbs)	% dLys	Grower Intake (lbs)	% dLys	dLys Consumed (g)
	Bottom	3.9	↓ 1.1	1.22	↓ 2.8	1.10	↓ 20.1
	Average	4.2	↓ 1.2	1.22	↓ 3.0	1.10	↓ 21.6
	Top	4.5	↓ 1.3	1.22	↓ 3.2	1.10	↓ 23.2
	Reformulate Bottom	3.9	1.1	1.40	2.8	1.28	23.2
	Reformulation Cost			\$25.75		\$24.20	

- Only commodity markets will get this by executives

So What?

Total Breast Meat Yield

This is kind of a big deal; function of formula and feed intake



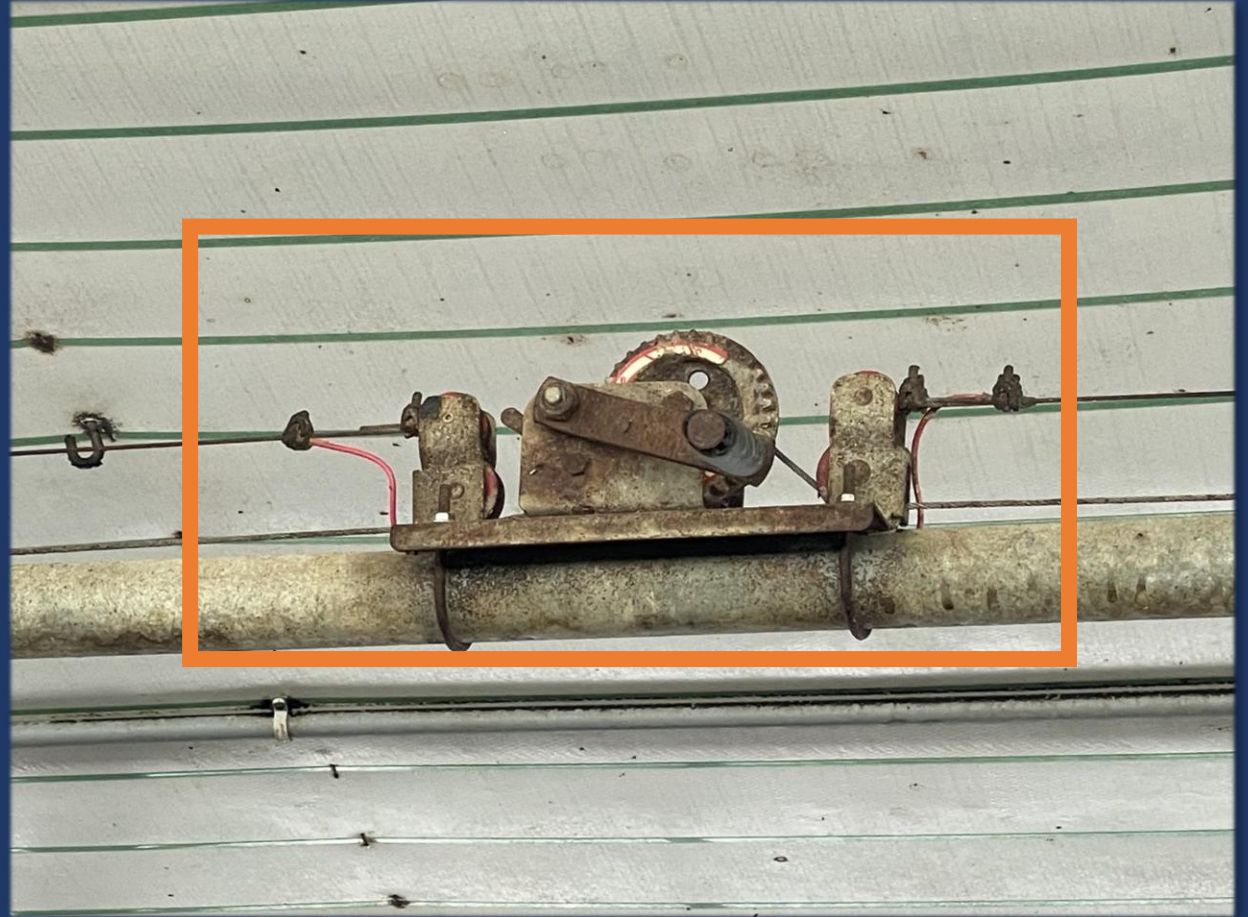
Broilers

1. Flood Transition

Where Is The Feed?



We Need Flexibility



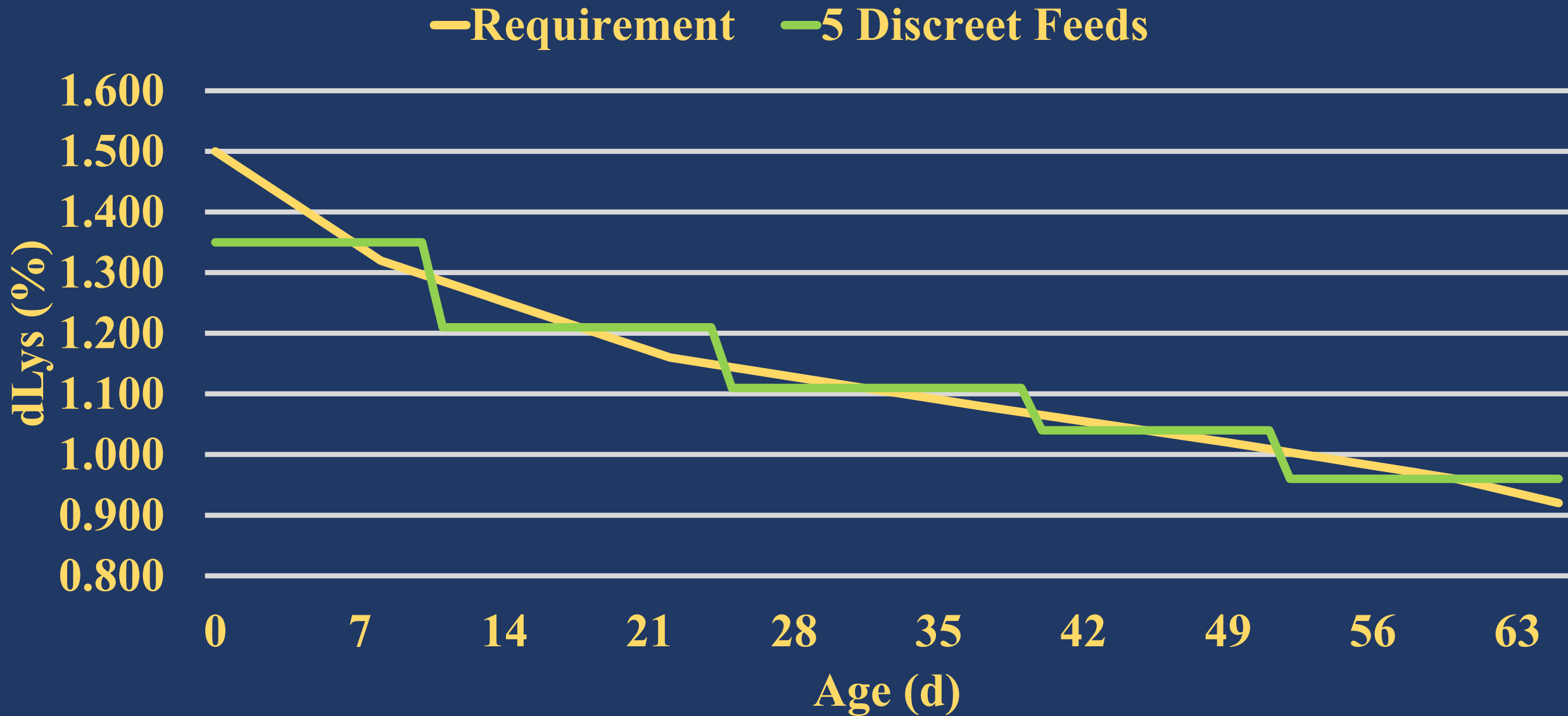
We Need Flexibility

- **Our current flood pans and transition strategies do not adequately feed broilers**
 - **Feed off trays during the transition**
 - **Run feeders manually in flood for longer**
 - **Redesigned flooding mechanisms that don't require us to rely on manual feeding**

Broilers

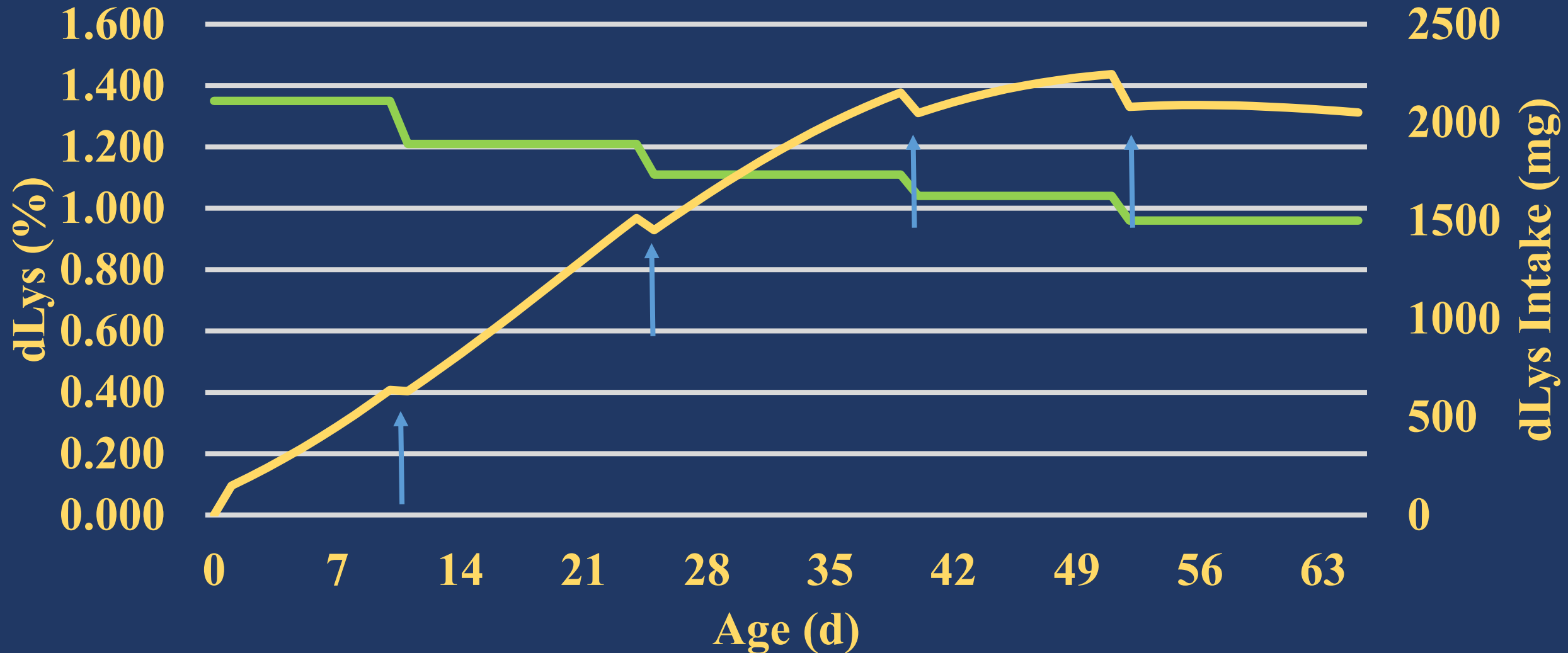
2. Precision Blending

Discrete Requirements Don't Exist



Prohibiting Lysine Intake

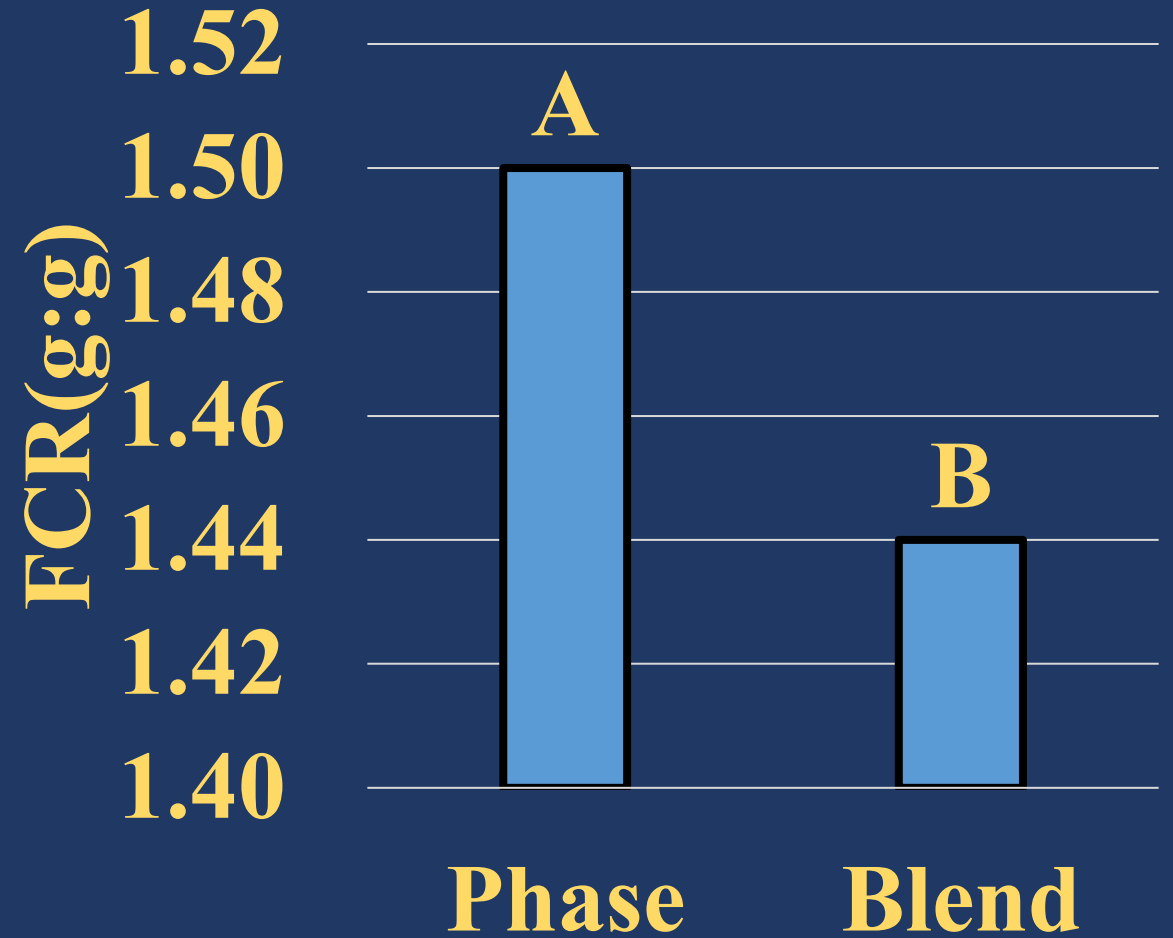
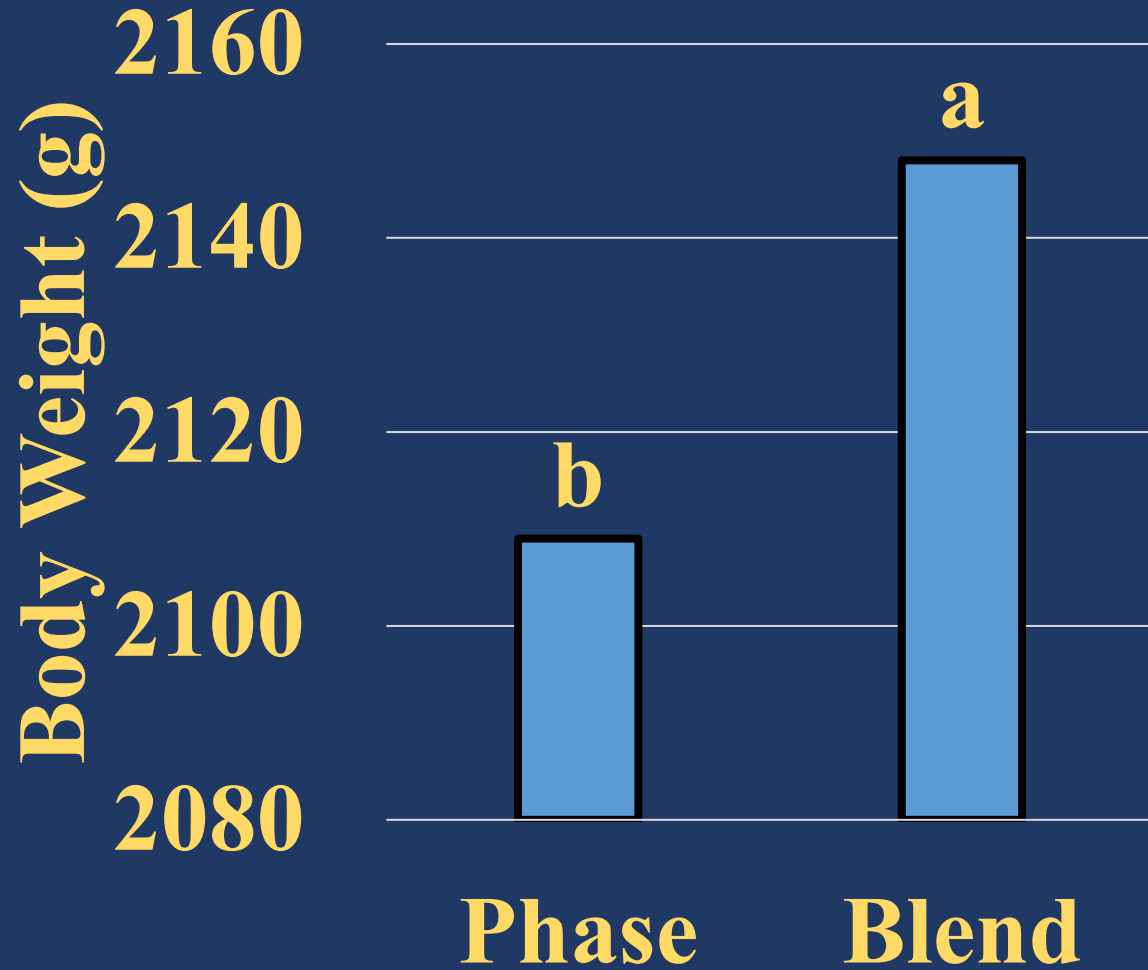
— 5 Discrete Feeds — dLys Intake



Equipment Will Get Better



Broiler Results – More to Come



*Courtesy of Dr. Sean Chen and Nicolas Mejia, UGA

Swine Results

Feeding Technique	BW	dLys Intake	Nitrogen Excretion	Feeding Cost
Blend vs. Phase	*NSD	-26%	-30%	-10%

- **Phase fed or individually precision fed to a body weight model for daily dLys intake**
- **Although we can't individually feed chickens yet, a feedback model might reduce overfeeding high performers and underfeeding low performers**

Broilers

3. Chick Sorting

Gender Identification Machine

- Can we train this to predict chick weight?
- We place flocks based on parent age
- Can we place the bottom 10% together in specialized housing (heat, feed, water)?
- Can we feed the bottom 10%?



Precision Feeding – Trial Design 2

Experimental Treatments:

A.	<u>Light pigs, Precise Lysine – (Diet 1)</u>	Diet 1
B.	Light Pigs, Barn Average Lysine - (Diet 2)	
C.	Medium pigs, Barn Average Lysine (Diet 2)	Diet 2
D.	<u>Heavy Pigs, Barn Average Lysine (Diet 2)</u>	
E.	Heavy Pigs– Precise Lysine (Diet 3)	Diet 3

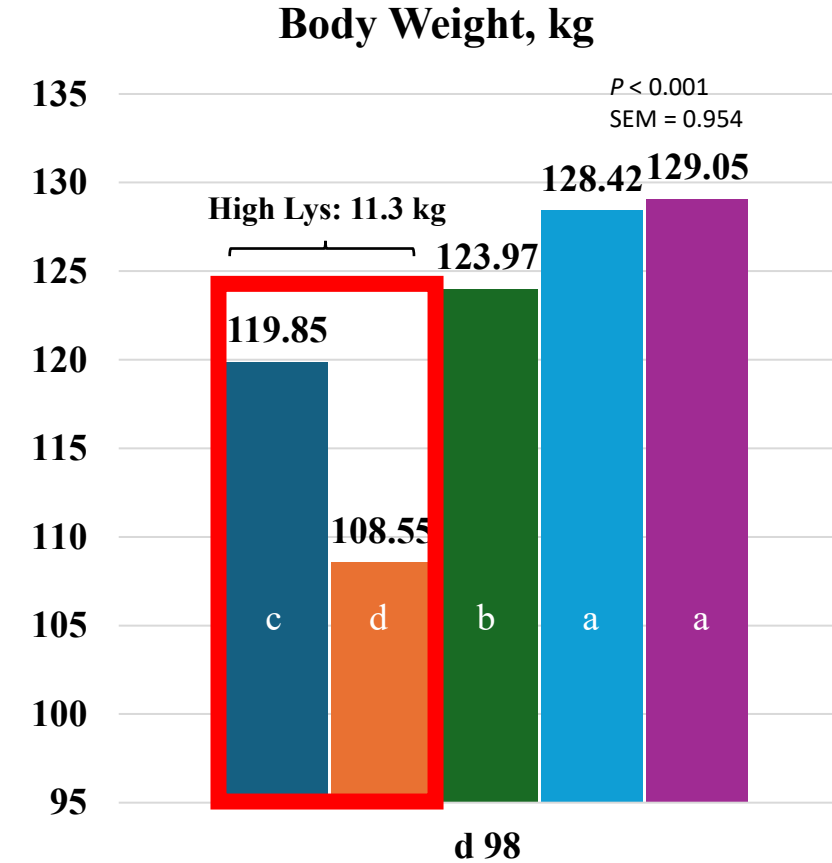
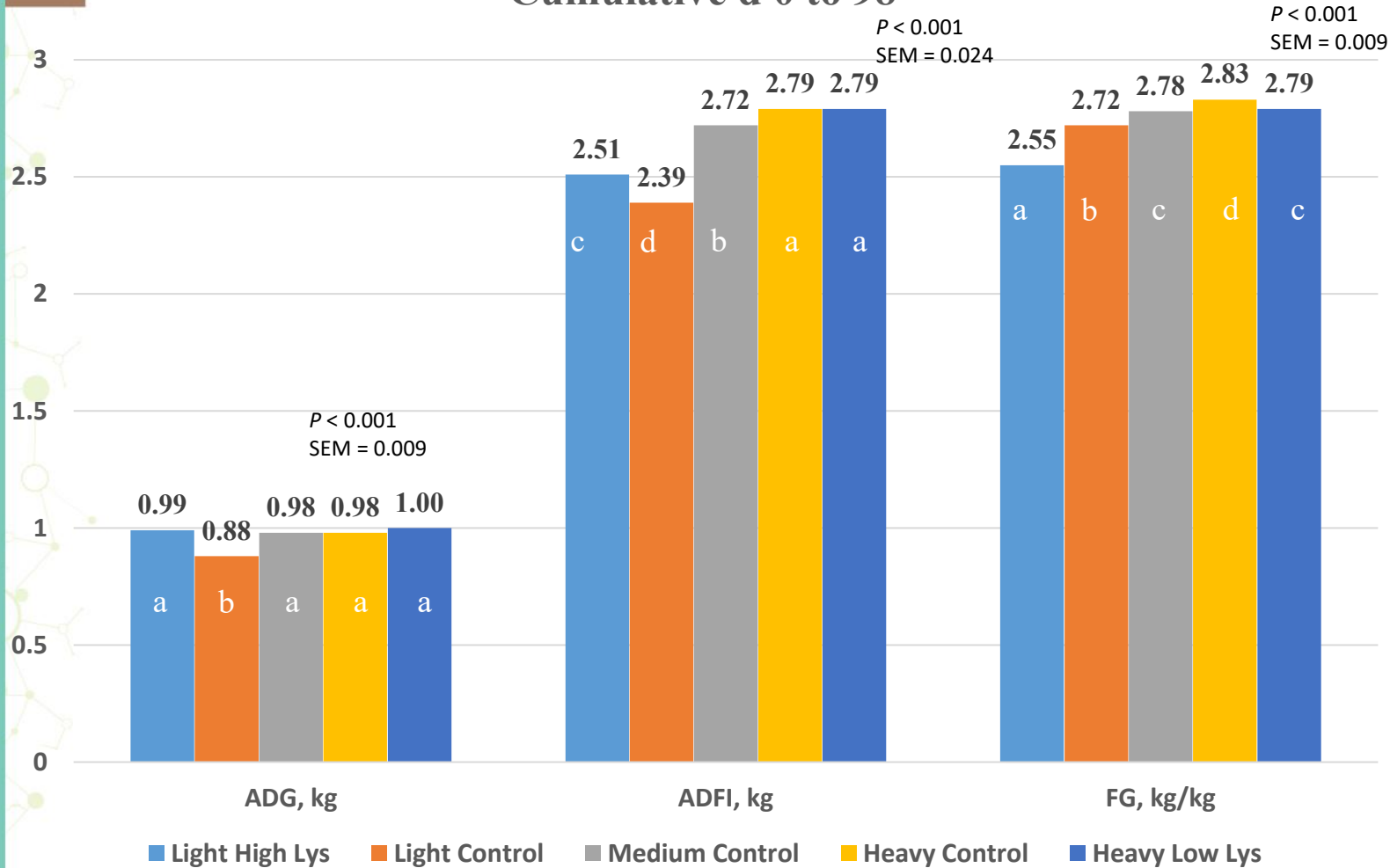
***Courtesy of Dr. Devin Goehring, United Animal Health**



Precision Feeding – Trial Design 2

Start Wts: 22.5^c, 22.3^c, 27.0^b, 31.0^a, 31.1^a ($P < 0.001$)

Cumulative d 0 to 98



^{abc}Letters inside bars indicate statistical significance ($P < 0.05$) within each variable.

Broilers

- **We can't formulate our way around birds that don't eat because chickens that don't eat don't grow**
- **There are still opportunities to:**
 - **Do a better job transitioning birds out of flood**
 - **Deliver nutrients more precisely to requirements**
 - **Sort and allocate vulnerable populations to the best houses with the best managers**

Will Any of This Work? Is This Possible?

We must mess around to find out

Thanks for listening!



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