

The background of the slide is a dark blue space scene with a large, light blue planet on the left. Several smaller, reflective blue spheres are scattered across the scene. Some of these spheres contain images of chickens and eggs.

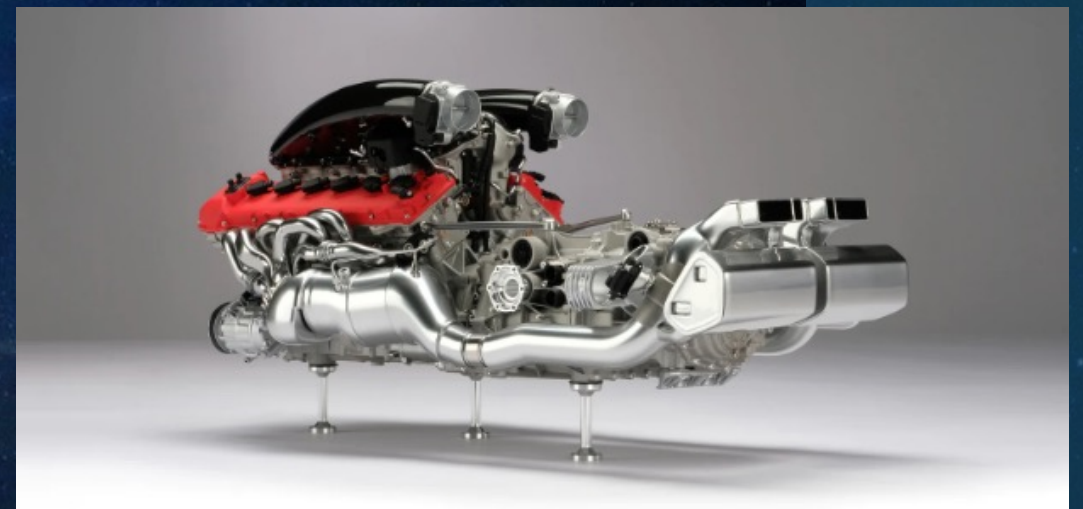
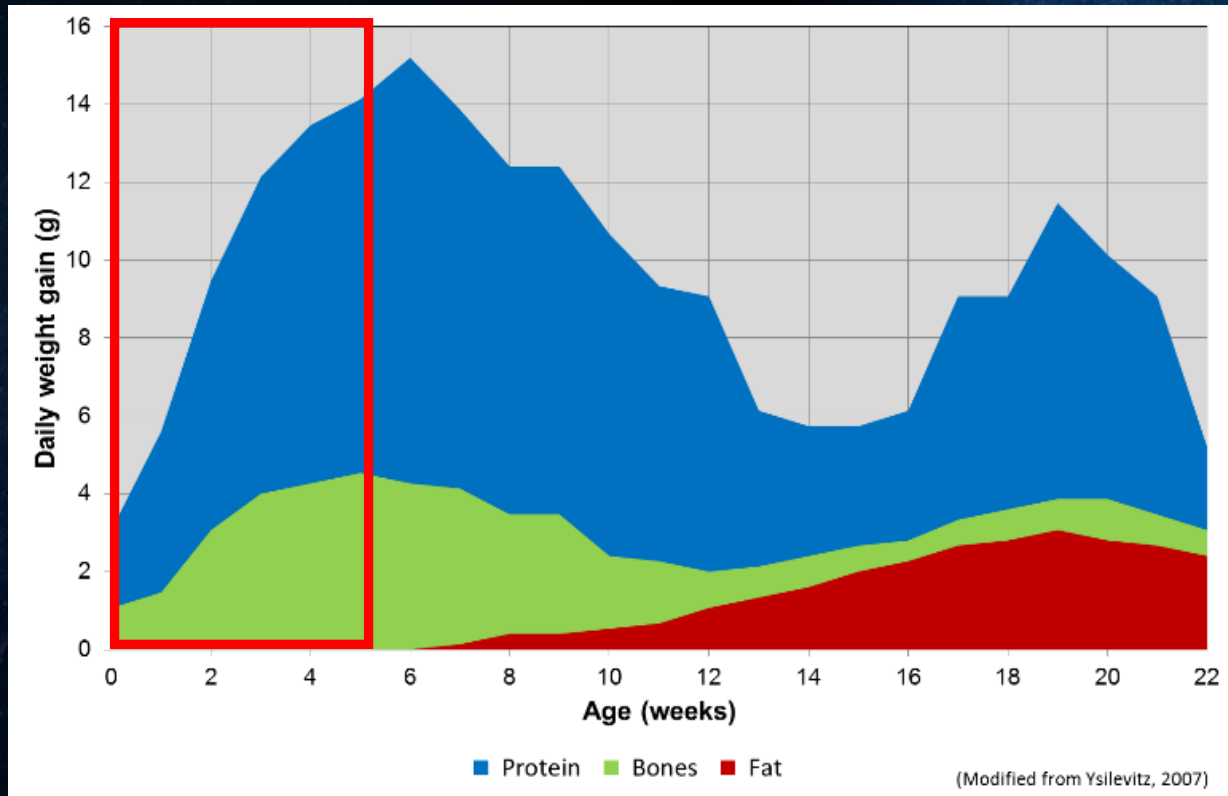
# Nutrition in rearing

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Technical Service Nutrition

**H&N Layer Academy, Philippines 2024**



# Start of rearing

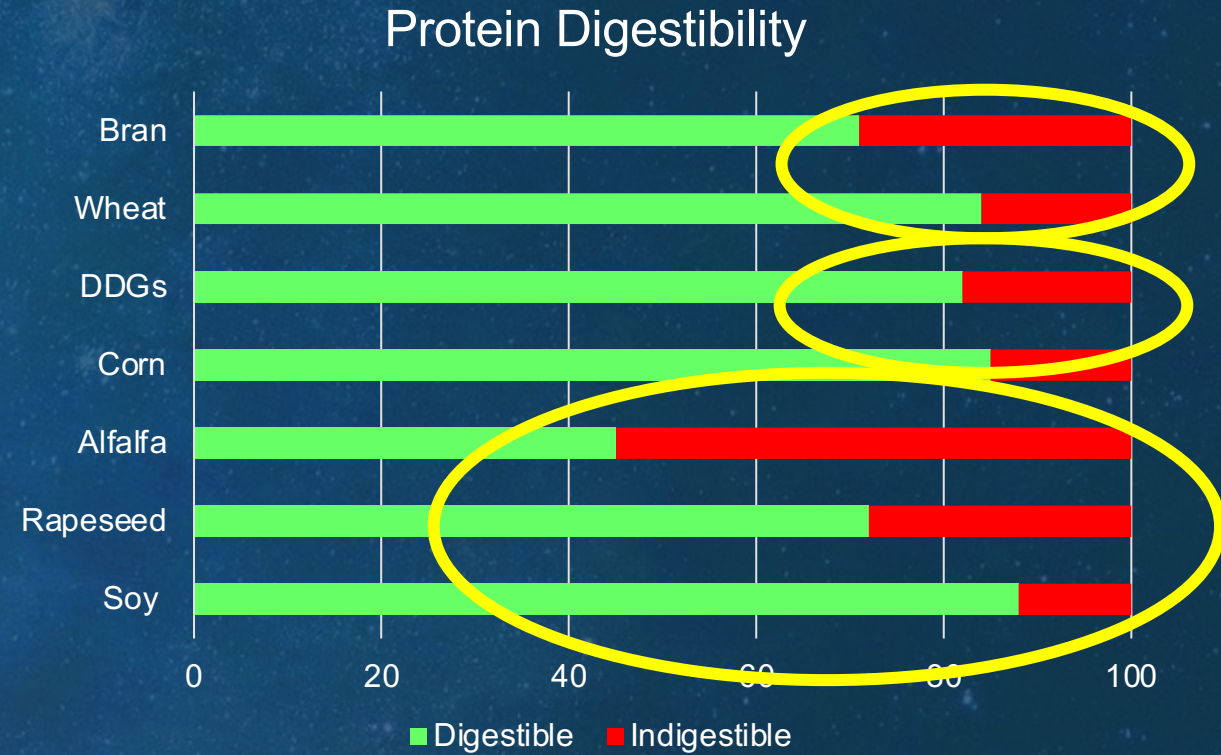


# Digestibility

## Energy

Energy	< 20 days (kcal/kg)	>21 days (kcal/kg)	Difference
Corn	3150	3250	-3%
Soybean meal	2040	2360	-13%
Sunflower meal	1425	1615	-12%
Wheat bran	1515	1840	-17%
Soy oil	8190	8750	-6%
Soybean oleins	7360	8250	-11%
Palm oil	6900	8150	-18%

## Amino Acids



### By-products

- < 5% 0-3 in the fist 0-3 weeks
- 5-10% 4-10 from 4-10 weeks



# Initiation Phase

## Recommendations

1. Do not change feed until the standard weight is reached
2. Use highly digestible feeds
3. Limit the use of by-products
4. For poor management:
  - ✓ Use quality crumbs: 2 mm Ø and high durability (>90%)

## Review key factors:

1. Check density
  - ✓ min. 285 cm<sup>2</sup> /chick
2. Check feeders space
  - ✓ min. 2,5 cm (0-3 weeks)
  - ✓ min. 5 cm (>3 weeks)
3. Check temperature of house



# Effect of bird density in the rearing phase

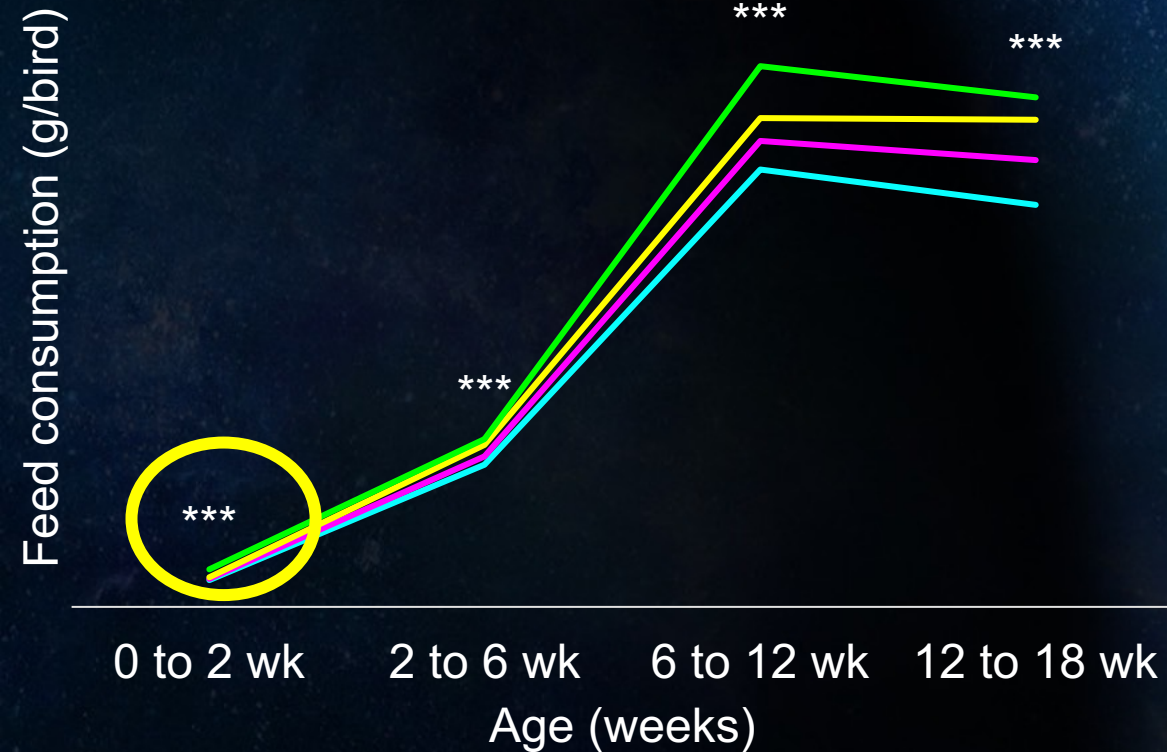
Very high density

High density

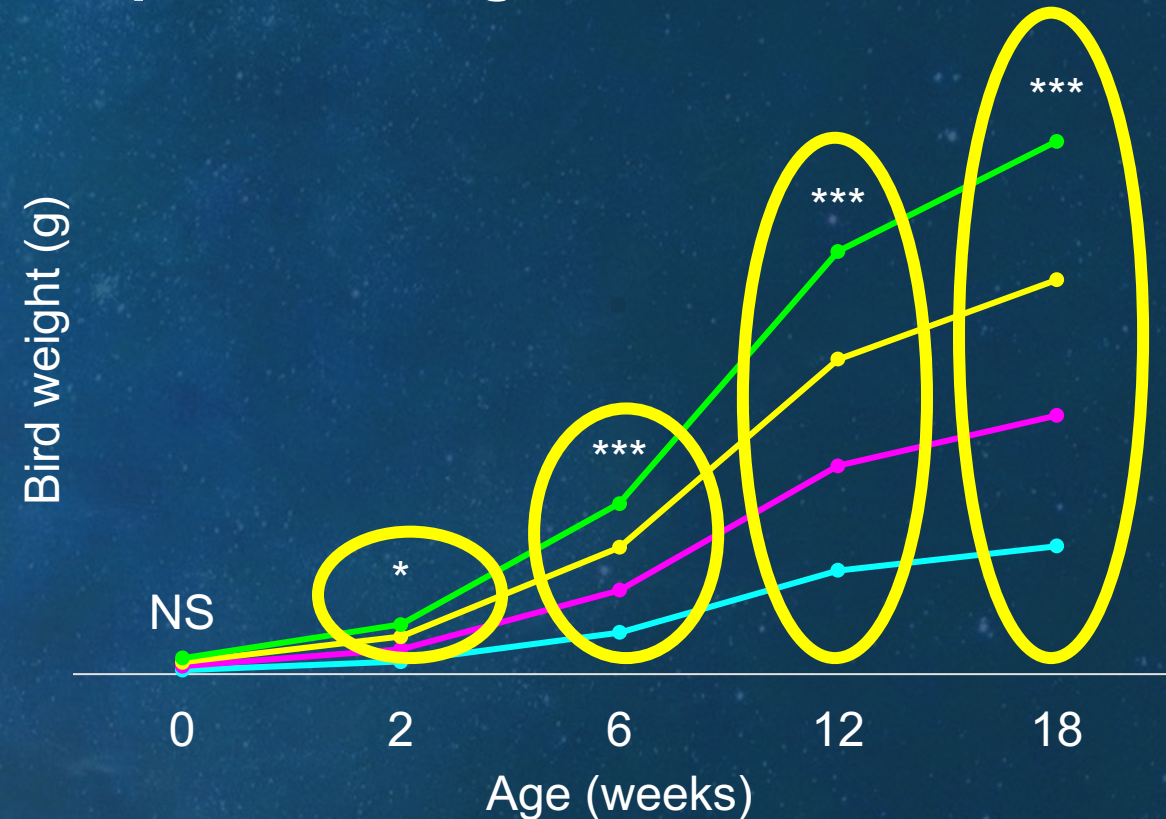
Medium density

Low density

## Impact on consumption

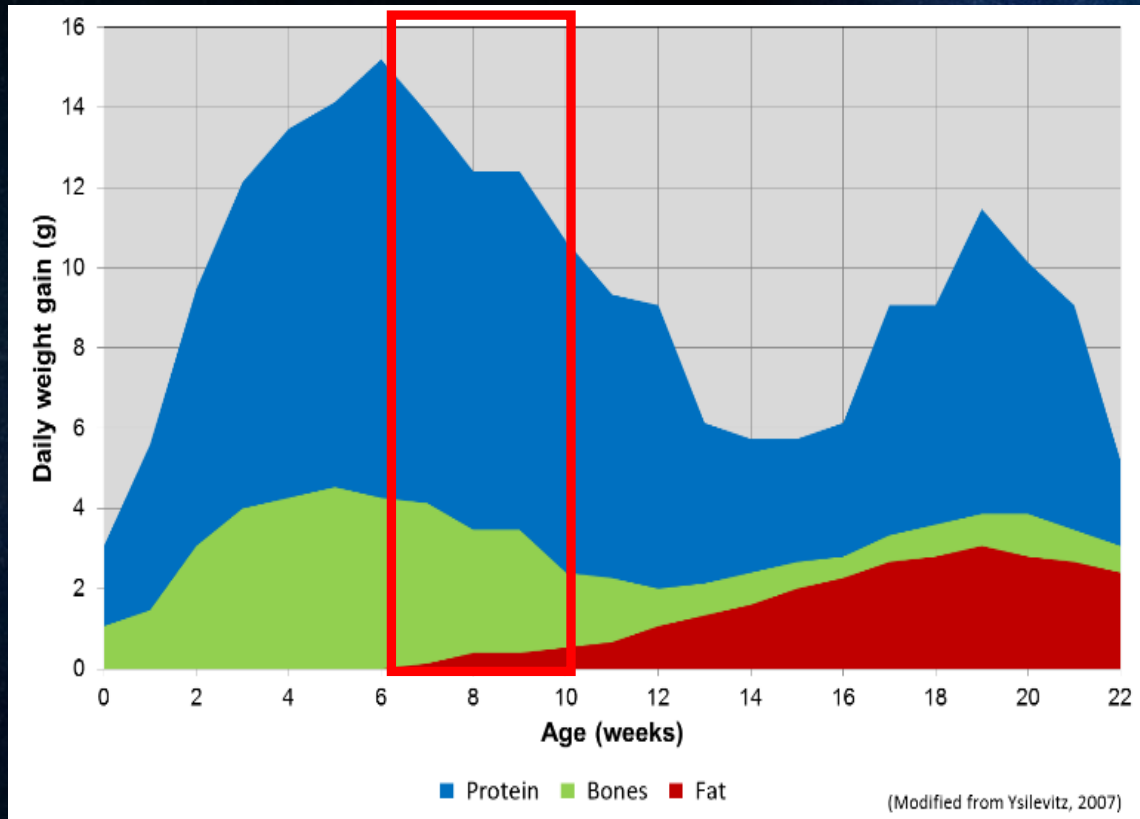


## Impact on weight



**High density = decreased consumption = low body weight**

# Growth phase



1. Intermediate needs of *Energy* and *amino acids*
2. Maintain proper development
3. Start stimulating consumption
4. *Start crumb* ► *transition flour*

**Reach standard weight at 10 weeks of age**

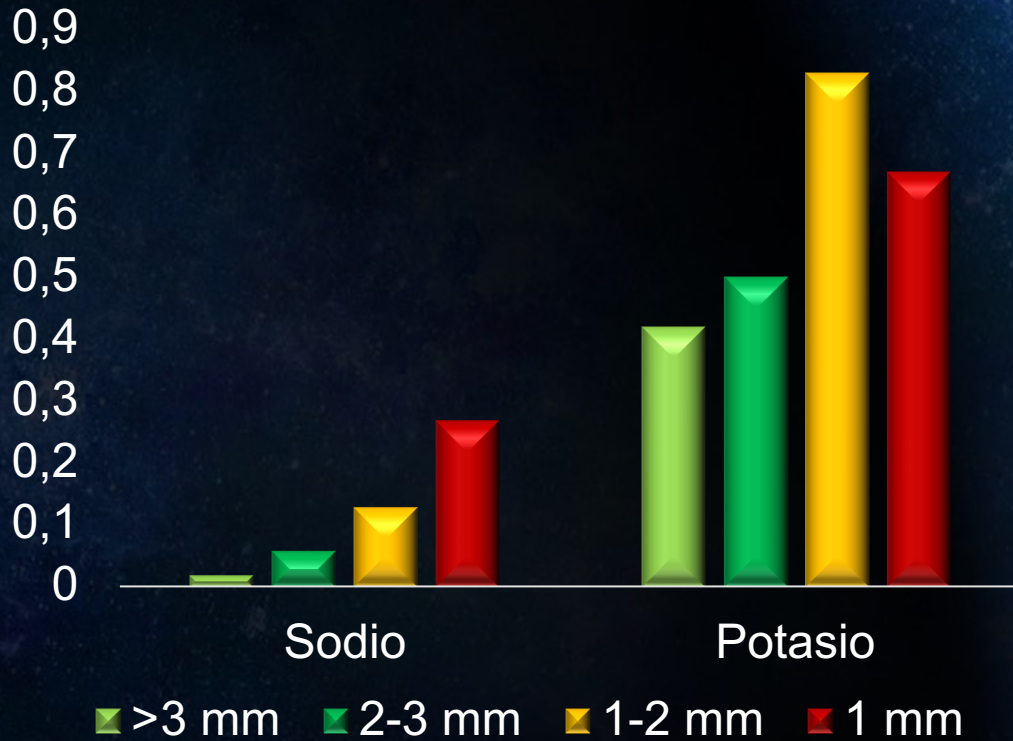


# Train to eat fine particles: **Why?**

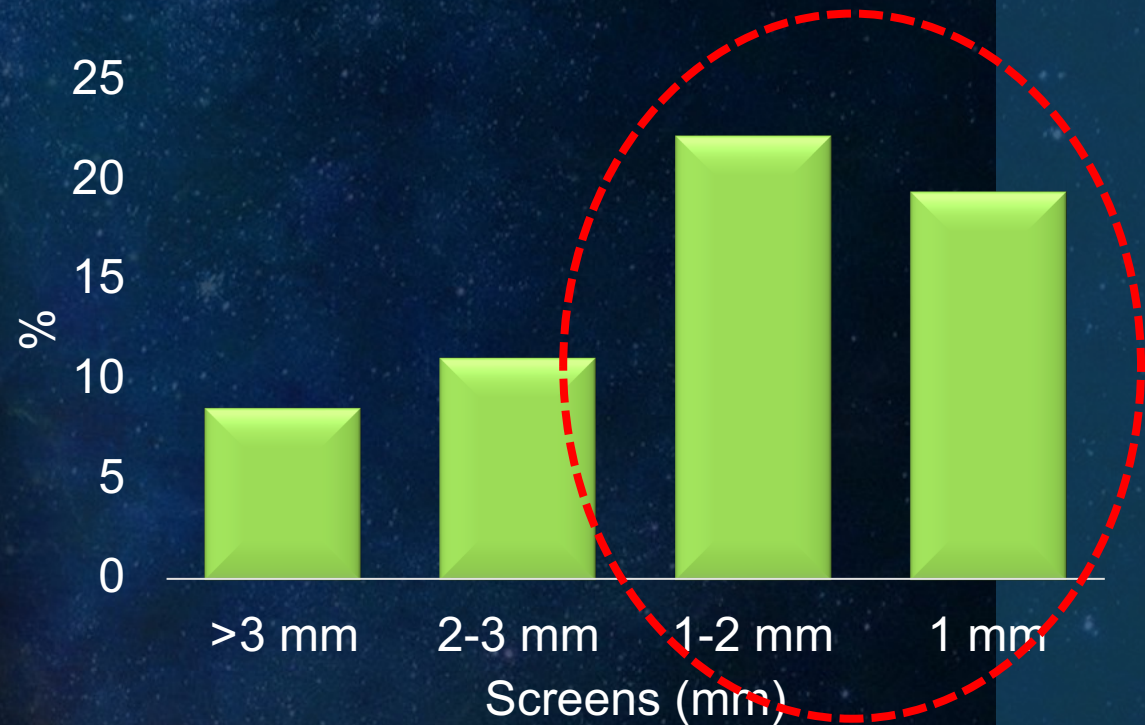


# Training to eat fine particles: **why?**

## Sodium



## Protein



**Factors in feather pecking, nervousness, production...**



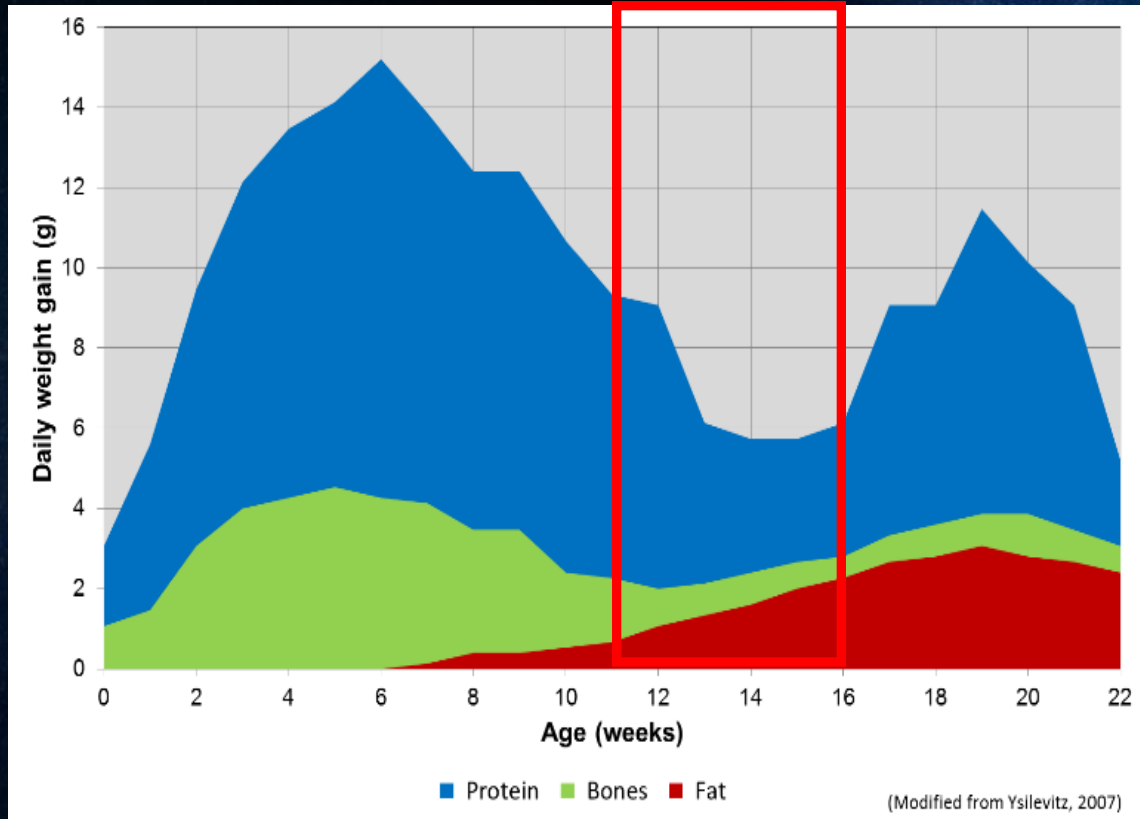
# Training to eat fine particles: How and when?



1. At 5 weeks of age
  - ✓ 2-3 times a week
2. From 6 weeks of age
  - ✓ 1 time per day
3. Continue in production
4. Empty feeders at midday
5. Maximum time empty feeder 1'
6. Double pass



# Development phase (training)



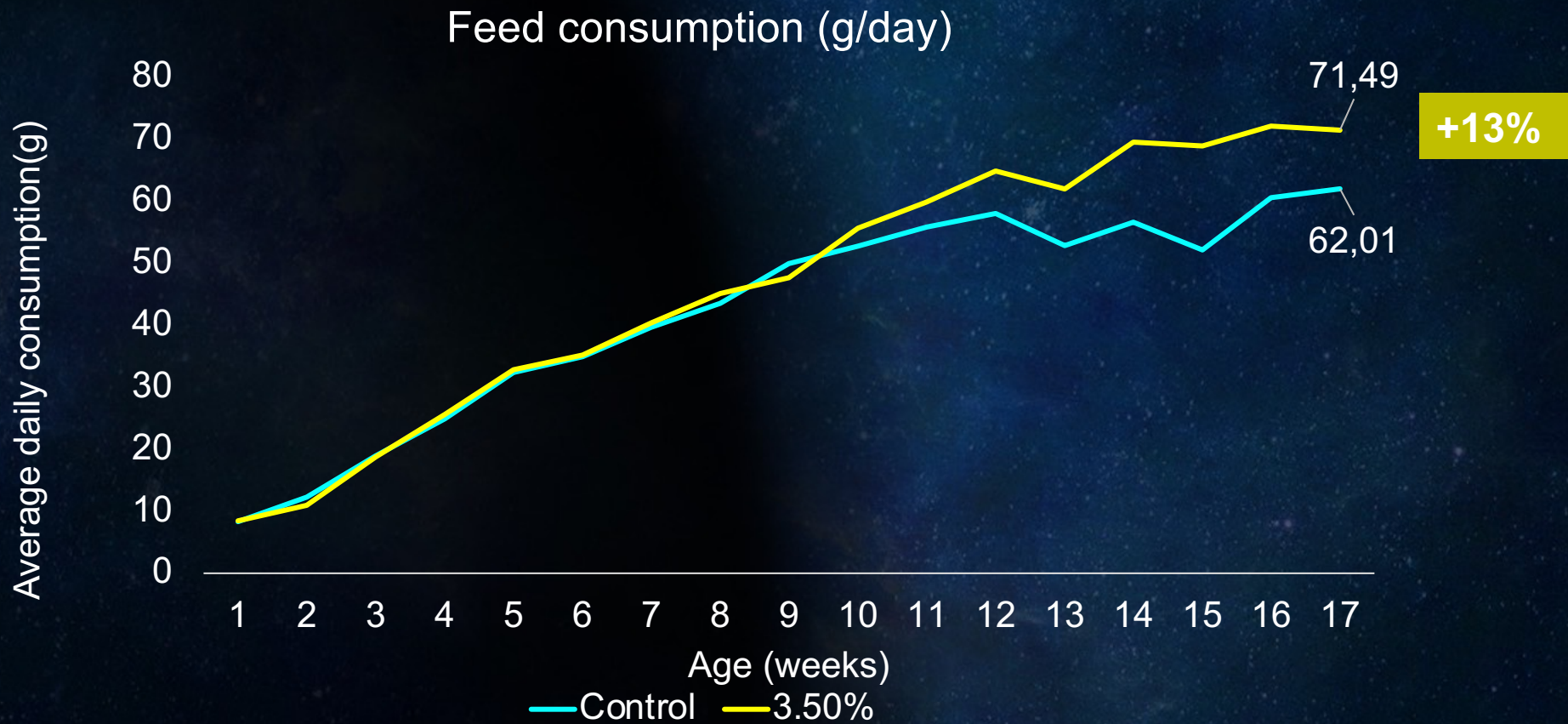
1. Increase digestive capacity
2. More training to eat “fine particles”

**Achieve standard weight and maximum uniformity**

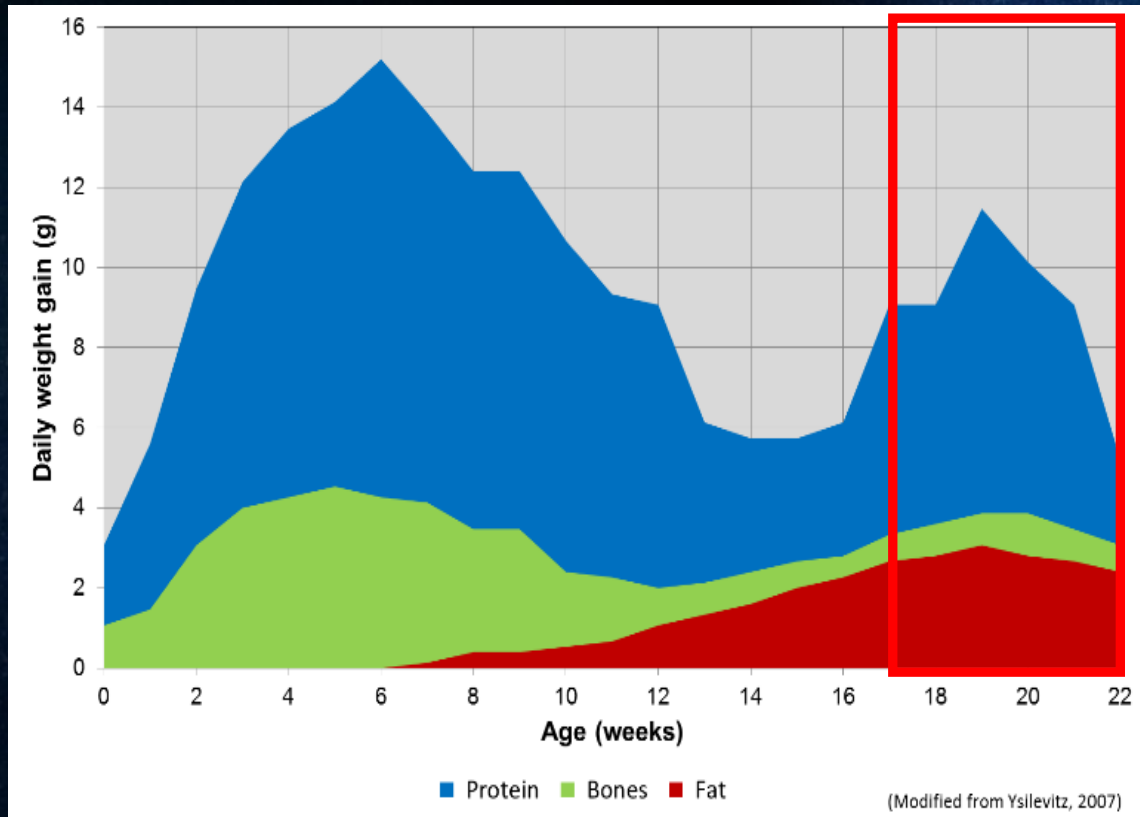
**Maximum intake capacity at the end of rearing**



# Effect of fibre



# Start of production



What's happening?  
Many changes = a lot of stress!  
Hormonal changes  
+  
Reproductive development  
+  
Beginning of deposition  
=  
Increased needs

**Feed consumption has to increase simultaneously**



# NUTRITION

## PRE-LAY NUTRITION

► How to feed for layer development and the start of egg production.

### FEED DESCRIPTION AND MANAGEMENT

- A transition feed that supports the final development of the pullet and the nutrient requirements.
- The feed must be managed carefully (see table 14).
- **Negative impact of incorrect use of pre-lay:**
  - decalcification of the shell
  - slow peak of lay
  - double peak of lay
  - low eggshell quality

### NUTRIENT REQUIREMENTS

- See the energy, amino acids and calcium & phosphorus recommendations, table 11.
- The AA and MEn can be calculated based on the available scientific literature. In that case we recommend following the table 13 Ideal AA profile for pullets.
- See vitamins and minerals in table 12.

### FORMULATION TIPS

- Minimum of added fat will reduce the dustiness of the mash feed (1 – 2 % based on cost impact).
- Calcium carbonate particle size should follow layer guidelines.

Table 11: Nutrient requirements in Pre-lay

Component	Requirement
Crude protein	18.00 %
Methionine	0.90 %
Dig. Methionine	0.70 %
Met. + Cysteine	0.21 %
Dig. Met + Cys	0.80 %
Lysine	0.88 %
Dig. Lysine	1.04 %
Threonine	0.80 %
Dig. Threonine	0.80 %
Tryptophan	0.16 %
Dig. Tryptophan	0.16 %
Valine	0.40 %
Dig. Valine	0.40 %
Arginine	0.73 %
Dig. Arginine	0.73 %
Calcium	2.00 %
Total Phosphorus	0.60 %
Avail. Phosphorus	0.40 %
Dig. Phosphorus	0.35 %
Sodium	0.16 %
Chloride	0.16 %
Potassium	0.50 %
Linoleic acid	1.00 %
Crude fiber	4.00 %

Table 12: Vitamin and trace mineral recommendation in Pre-lay

Component	Requirement
Antioxydant	100 – 150 mg/kg feed
Cocciostats	1.0
Manganese	16 mg/kg feed
Zinc	17 mg/kg feed
Iron	18 mg/kg feed
Copper	5 mg/kg feed
Iodine	0.5 mg/kg feed
Selenium	0.25 mg/kg feed

\* Higher level might be possible according to local state and national regulations.  
 \*\* double in case of heat treated feed

# Hybrid feed

Opción más fácil





# Hybrid Feed Concept

Nutrientes		
EM	Kcal / kg	2.700
Dig Lis	%	0,80
Dig Met	%	0,40
Dig M+C	%	0,72
Dig Thr	%	0,56
Dig Trp	%	0,18
Ca	%	3,8
P disp.	%	0,44
Fibra Bruta	%	3 - 4,0
Sal	%	0,28

→ Low energy

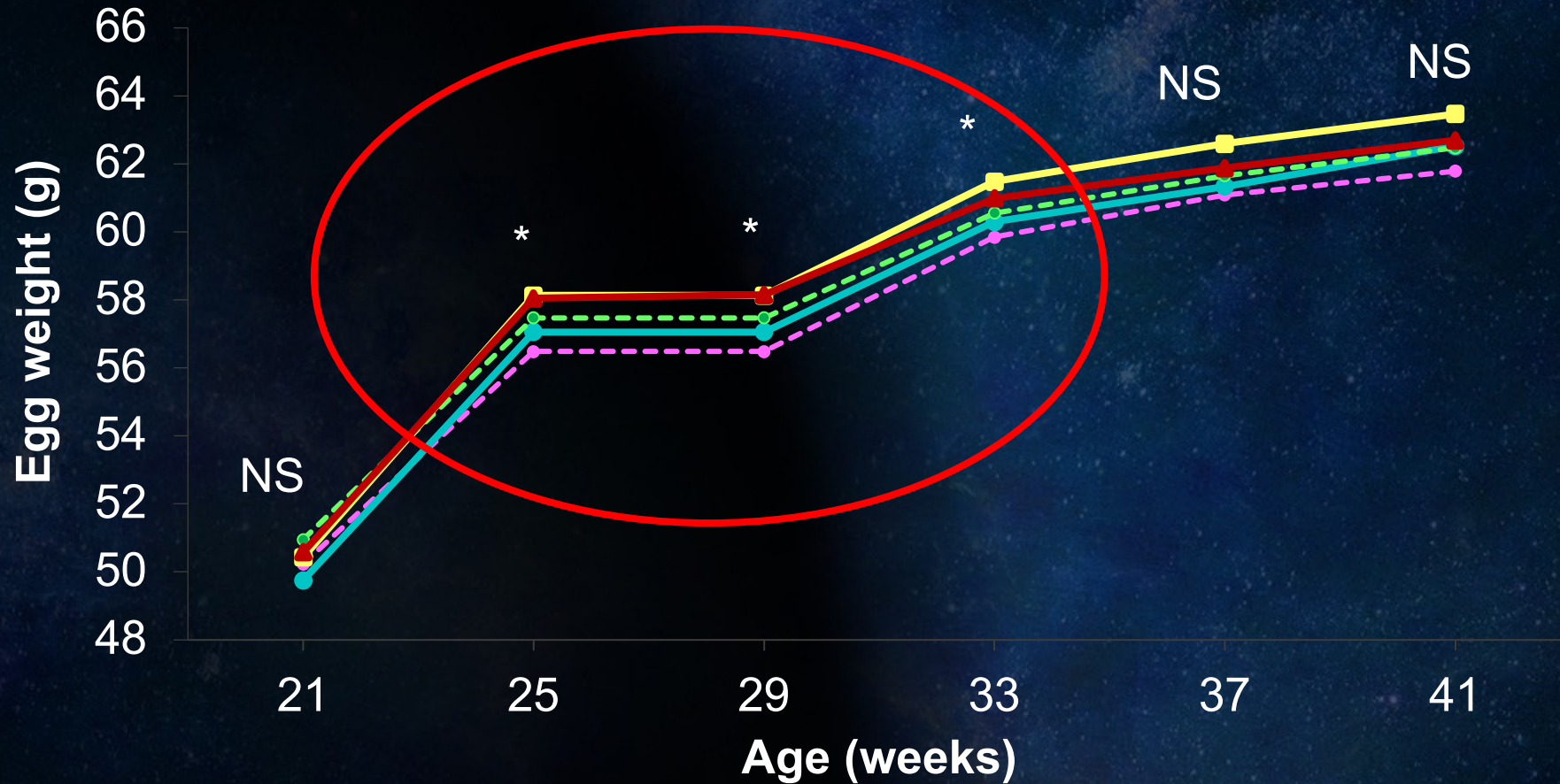
High amino acids

• 60% carbonate in the form of coarse particles

→ Promote feed intake

→ Stimulate feed intake

# Effect of amino acids on the onset of laying



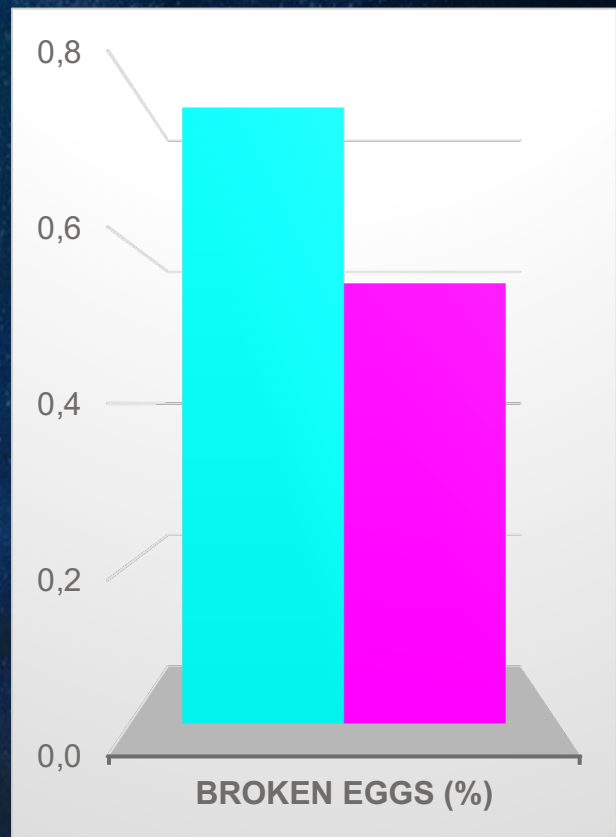
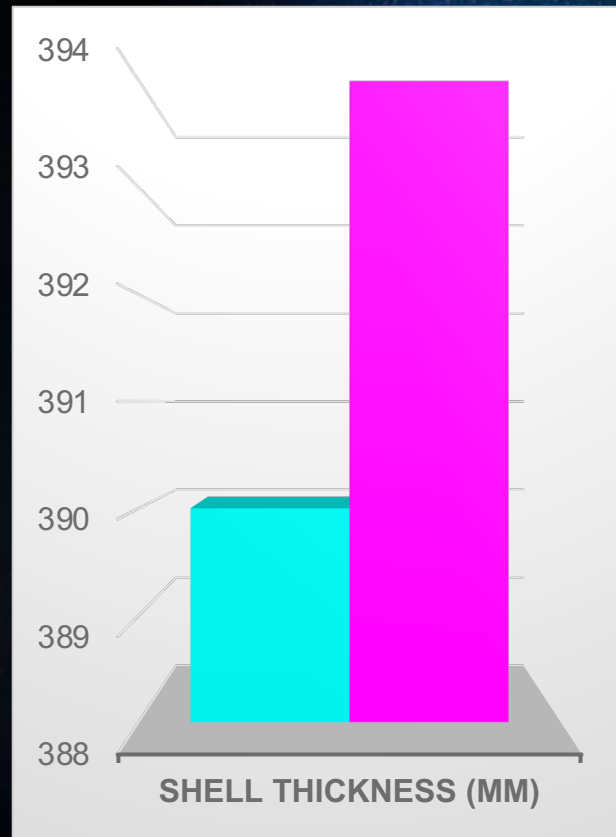
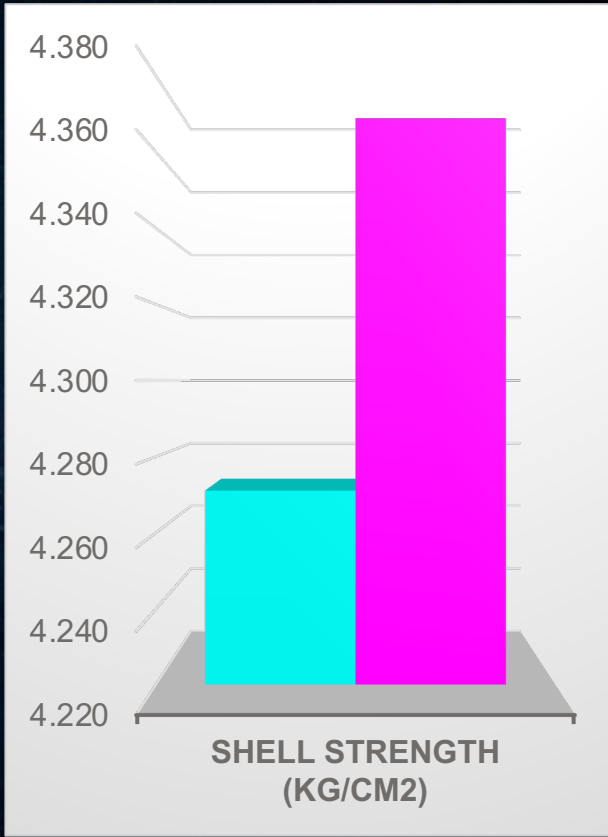
**Higher levels of AA in the diet allow the desired egg weight to be reached earlier**

--- 0.665 DLys    -●- 0.695 DLys    -●- 0.725 DLys    -■- 0.755 DLys    -●- 0.785 DLys



# Effect of dietary calcium content from 16 to 19 weeks of age on eggshell quality during the laying phase

■ Calcium 2.50 %    ■ Calcium 3.80 %

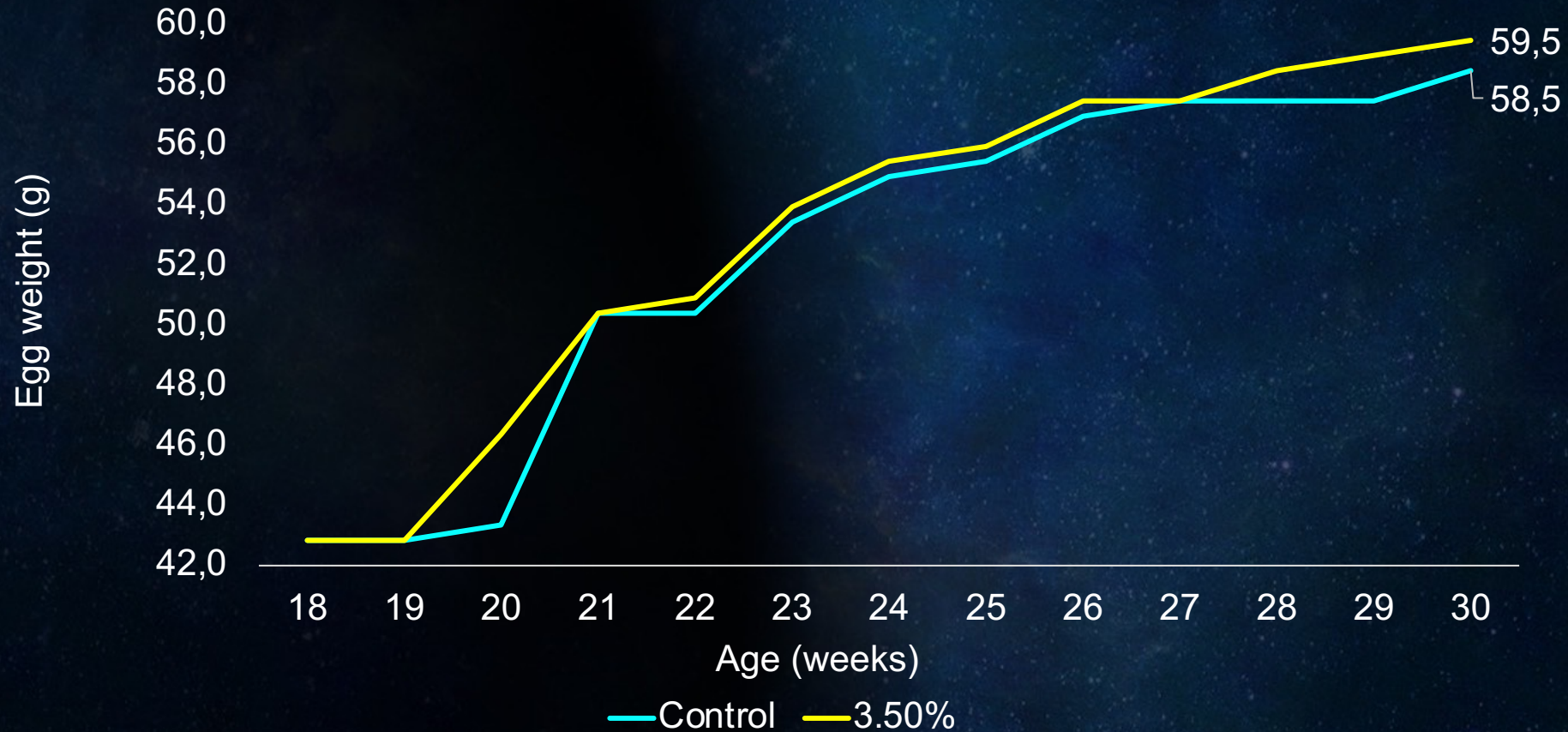


**More calcium at the beginning of laying, better shell quality during the production cycle**

Fuente: De Juan et al., 2023.

# Effect of the Hybrid

Evolution of egg weight





# Nick chick and egg size

Start in October 2023

- Housing
  - Number cages: 144
  - Number of birds: 720
  - Feeder space: 3.78 in / bird



# Hybrid 2.0

**Corn / Soya / Wheat bran**

**Salt: 0.28% Min/Max**

**Oil: 1.6% Min**

**Coarse Calcium 60%**

Nutrient	%
EM	2700
Dig Lys	0.80
Dig Met	0.40
Dig Met + Cys	0.72
Dig Thr	0.56
Dig Trp	0.176
Dig Ile	0.64
Dig Val	0.70
Dig Arg	0.832
CF	2.75
Ca	3.80
Av P	0.47
Na	0.20
Cl	0.20



# Layer 1

**Corn / Soya / Wheat Bran**

**Salt: 0.28% Min/Max**

**Oil: 2% Min**

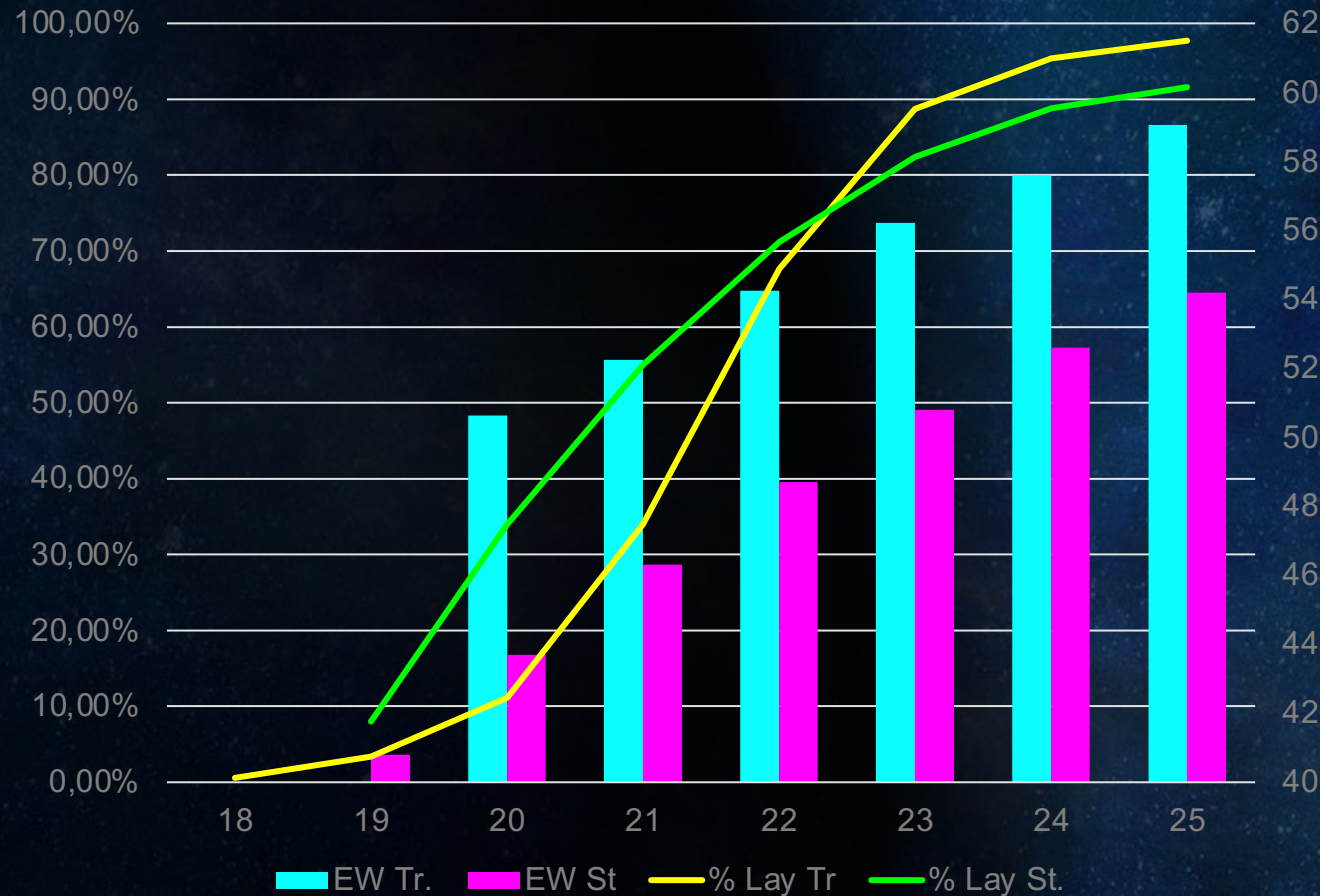
**Coarse Calcium 60%**

Nutrient	%
EM	2810
Dig Lys	0.76
Dig Met	0.38
Dig Met + Cys	0.686
Dig Thr	0.53
Dig Trp	0.168
Dig Ile	0.61
Dig Val	0.67
Dig Arg	0.79
CF	2.5
Ca	3.65
Av P	0.40
Na	0.17
Cl	0.17

# R&D H&N international

## Hybrid 2.0

Performance



**Body weight:**  
**BW at light stimulation:**  
**1,250 lb**  
**BW at 25 weeks**  
**1,550**

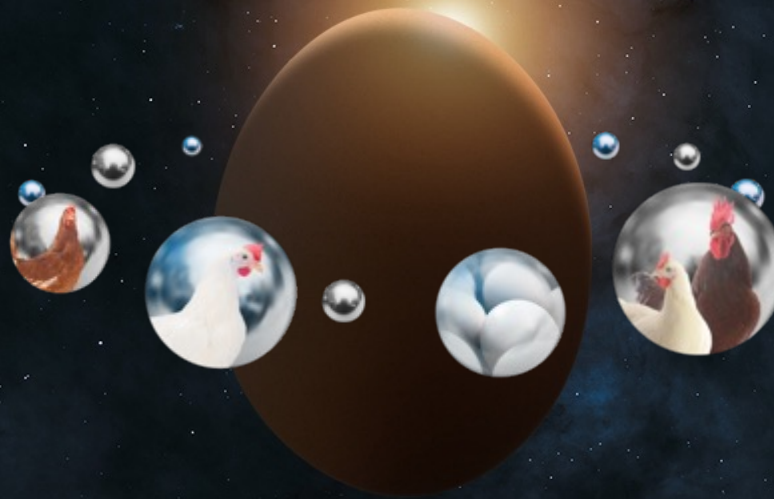


# Summary - rearing

## A good pre-season is necessary

- The rearing of chicks ends at 22 weeks.
- The structure of the bird is key in any type of production.
- The development of feed consumption is key to longevity.
- The development of feed consumption does not mean poor production efficiency.
- The rearing density of the birds is essential for the success of rearing...and production
- New approach to the start of production, hybrid feed.

# Thank you for your attention



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