A strategic feeding approach for cage-free pullets

Dr. Emilio R. Scappaticcio
Technical Service Nutrition Europe & America

Efficient and functional

development and conformation each structure of the birds

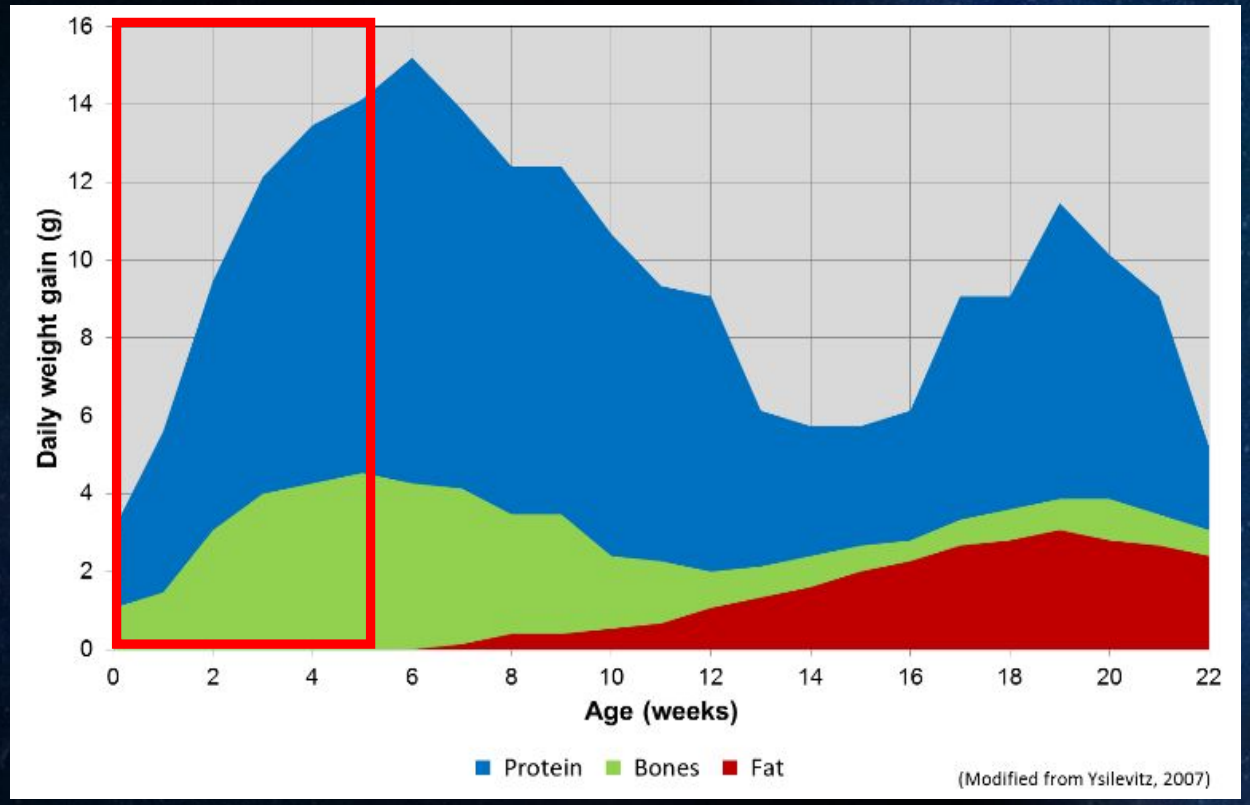
Avoid negative balance in growths

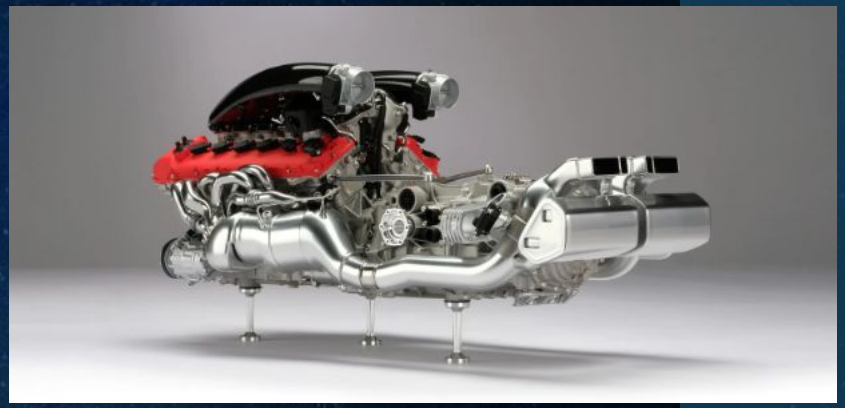
What happens

Goals

Nutritional strategy

Starting phase





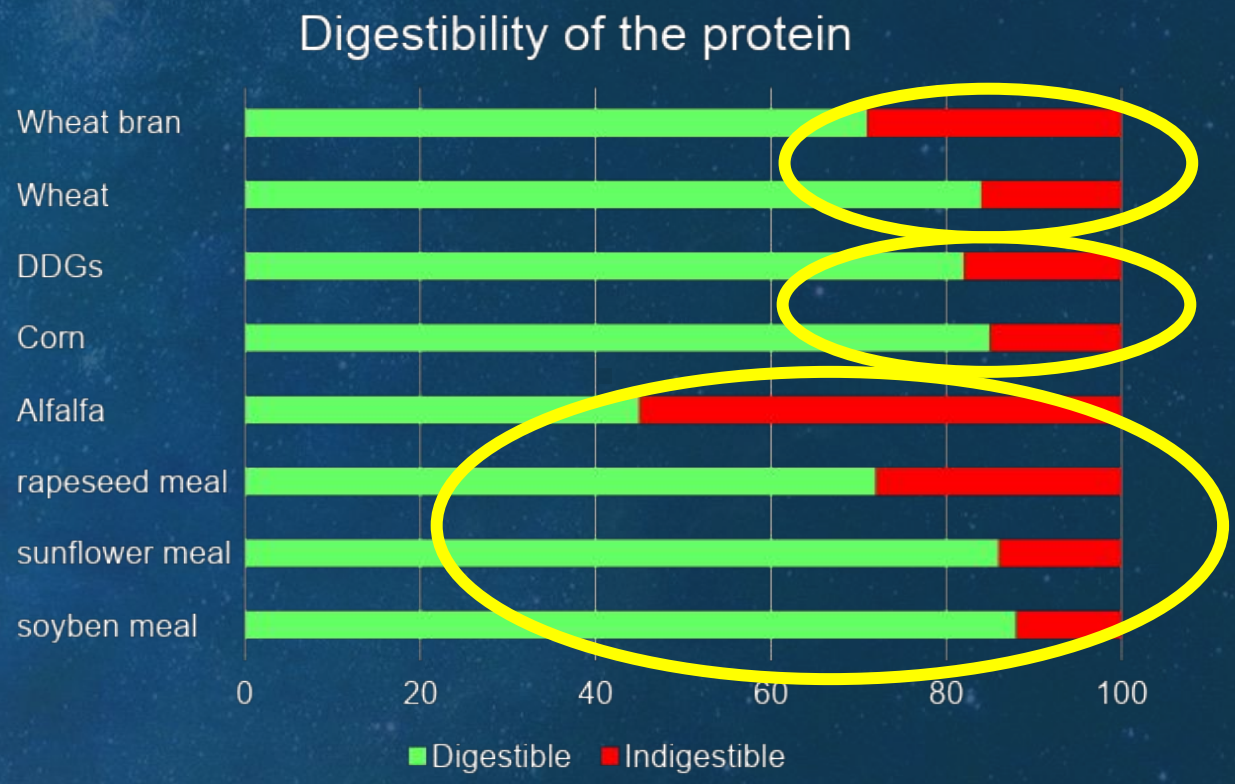
Achieving standard BW at 5 week of age

Digestibility

Impact of energy

Energy	< 20 day (kcal/kg)	>21 day (kcal/kg)	difference
Corn	3150	3250	-3%
Soybean meal 47%	2040	2360	-13%
Sunflower meal	1425	1615	-12%
Wheat bran	1515	1840	-17%
Soya oil	8190	8750	-6%
Soya acid oil	7360	8250	-11%
Palm oil	6900	8150	-18%

Impact of amino acids



By products

- **< 5% 0-3 week of age**
- **5-10% 4-10 week of age**

Starting phase

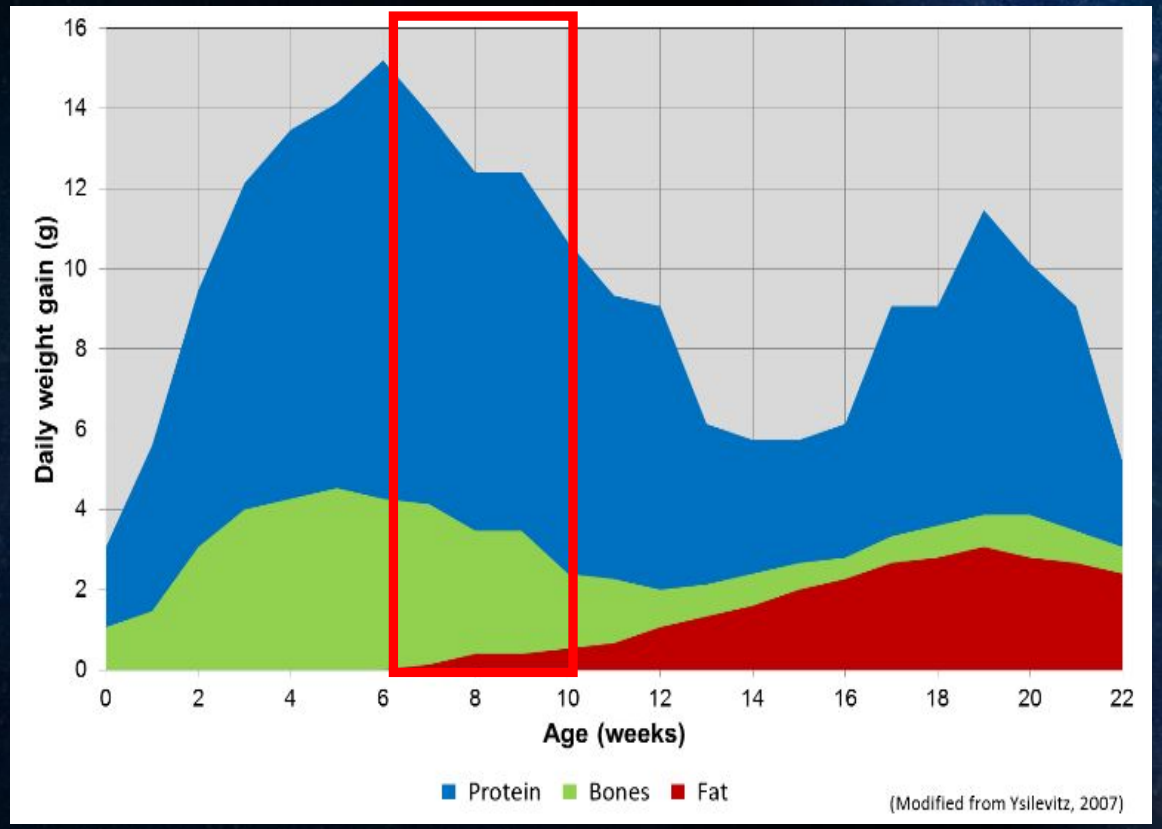
Recommendations

1. **NO** standard BW – **NO** change feed type
2. To use high digestible raw materials
3. Limited by-products
4. For management problems
   - ✔ To prefer crumble feed **(High quality)**
     - ✔ 2 mm Ø and high durability (> 90%)

Factors to review

1. Feeder space (cm/bird)
   - min. 2,5 cm RS/ 4 cm floor (0-3 week)
   - min. 5 cm RS/ 8 cm floor (> 3 week)
2. Stocking density
   - min. 285 cm^2 /bird RS (16 birds/m^2 floor)
3. House's temperature

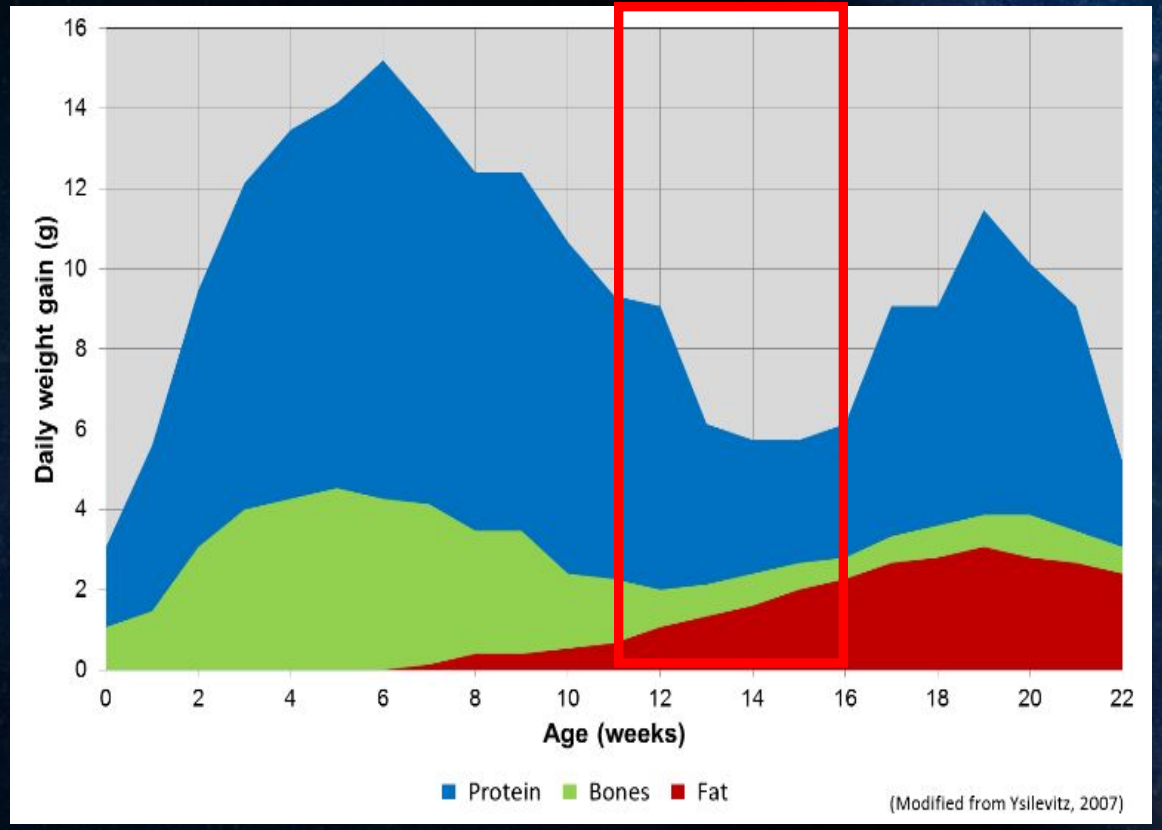
Grower phase



1. To maintain correct development
2. To start stimulation feed consumption
3. Medium density diet
   - ✔ ▼ Energy and AA
   - ✔ More variety of raw materials
   - ✔ *Starter crumble* ► *transactions mash*

Achieving std BW 10 wk of age

Developer phase (training)



Low grow ► low requirements

1. Increase digestive capacity

2. To train to eat **“FINE PARTICLES”**

To achieve std BW and maximum flock uniformity

Maximum feed consumption at end of the rearing

Developer phase

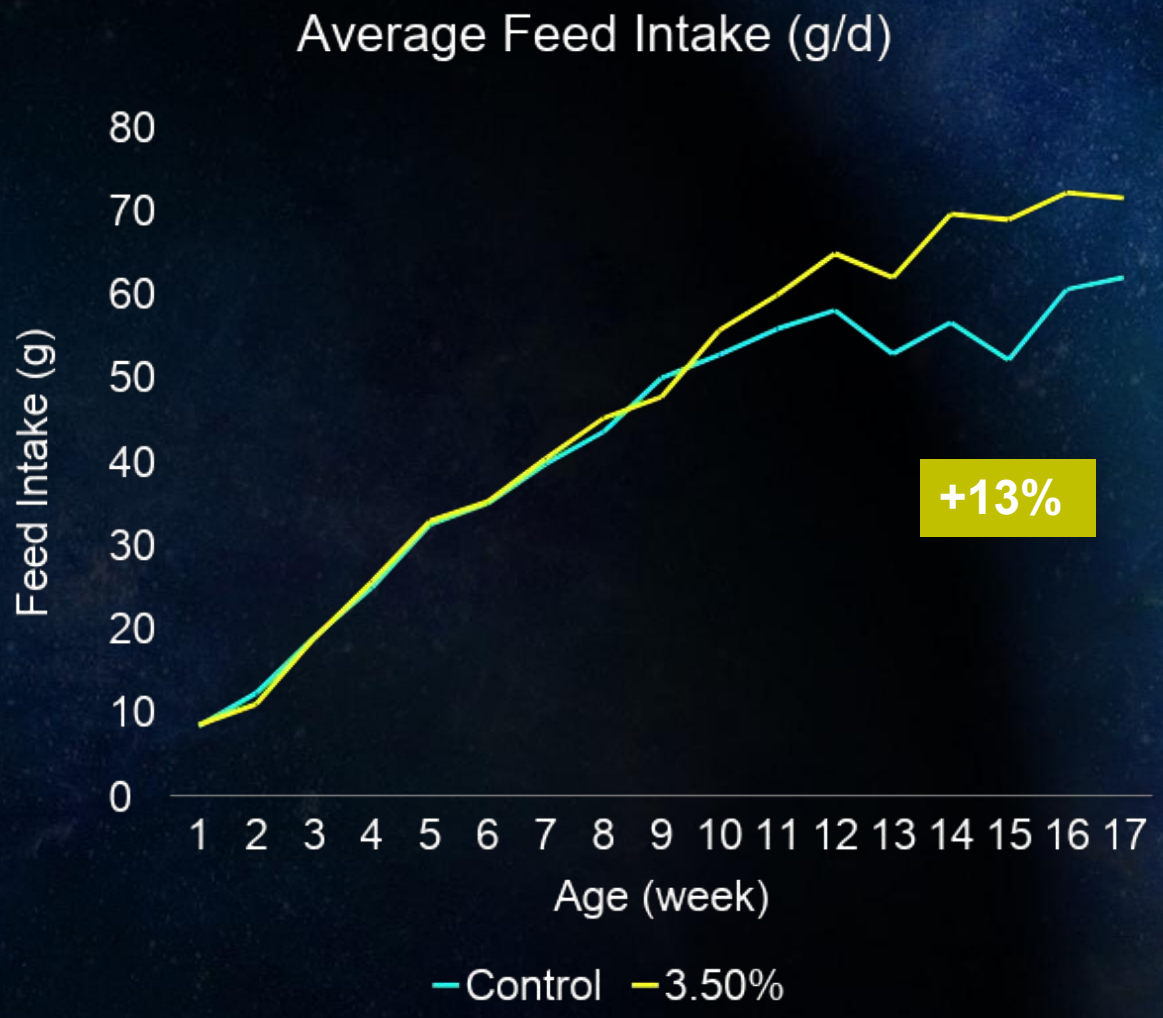
Fibre levels and digestive capacity

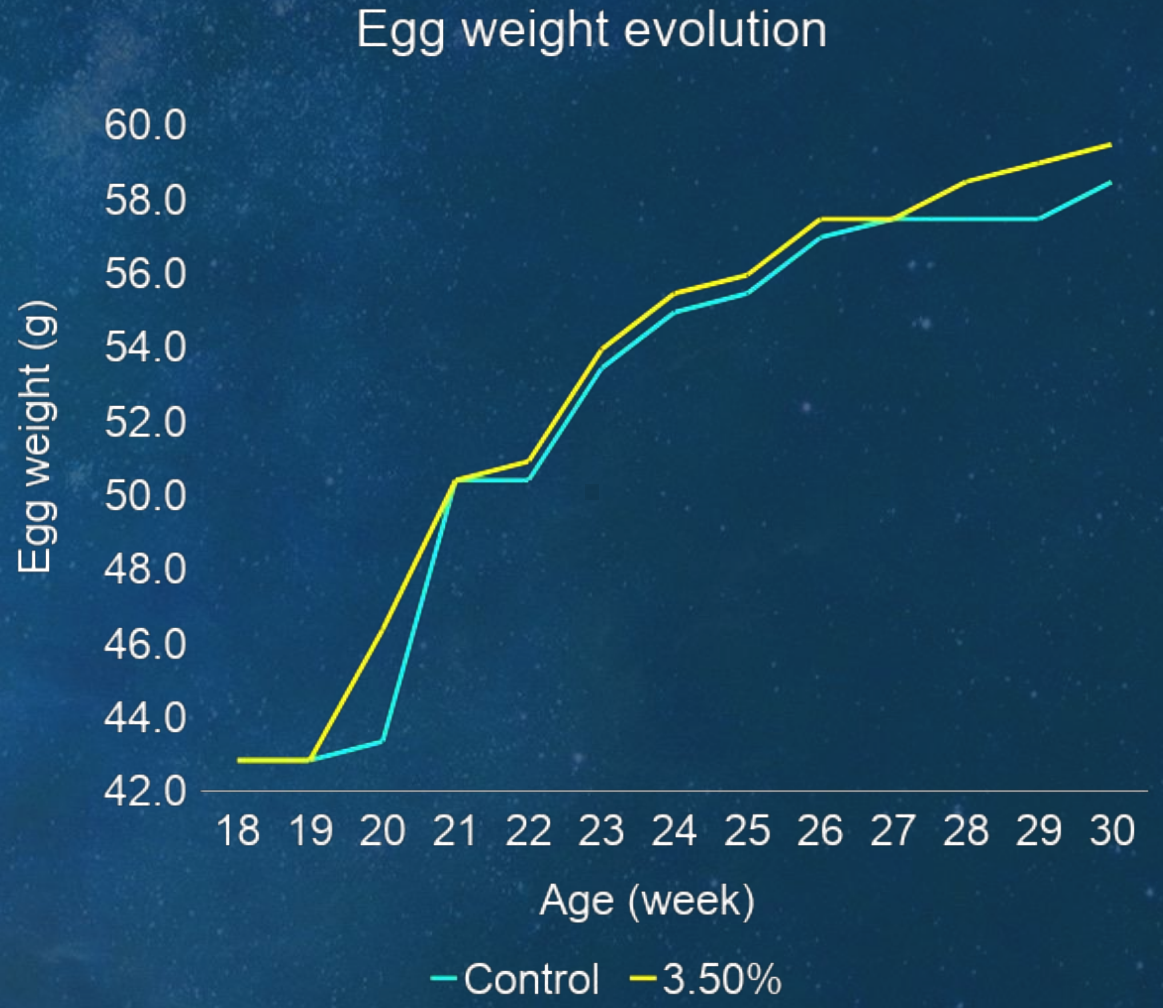
	Control	Fibre 2%	Fibre 4%
GIT[1]	11.5	11.9	11.9
Gizzard[1]	3.60	3.80	3.98
Feed Intake (0-17 wk)	48.9	49.3	49.6

[1]values at 17 wk of age

Source: *Guzmán et al., 2015*

Developer phase and fibre levels





Minimum 3.5% crude fibre in the diet

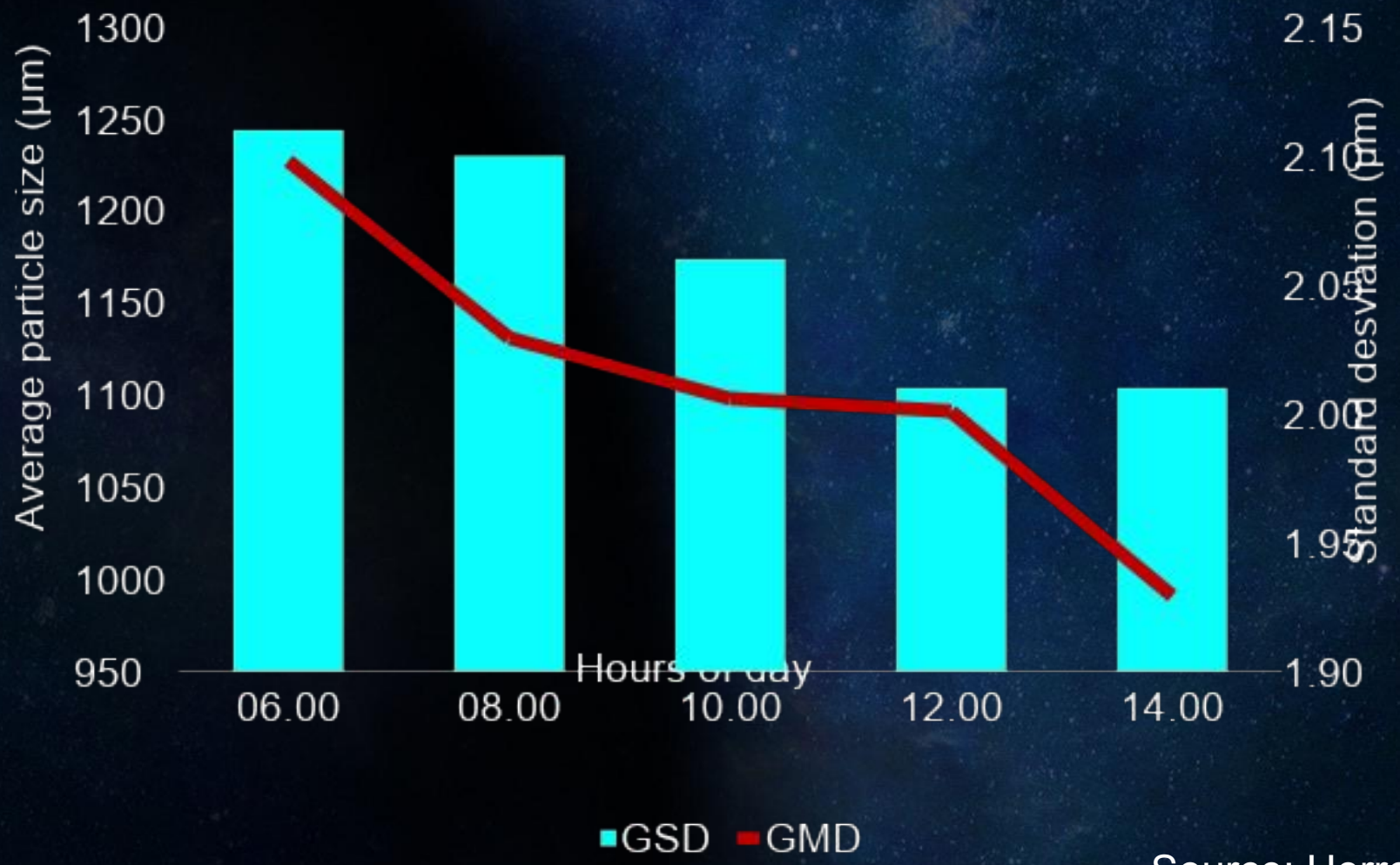
Training to eat fine particles: why?

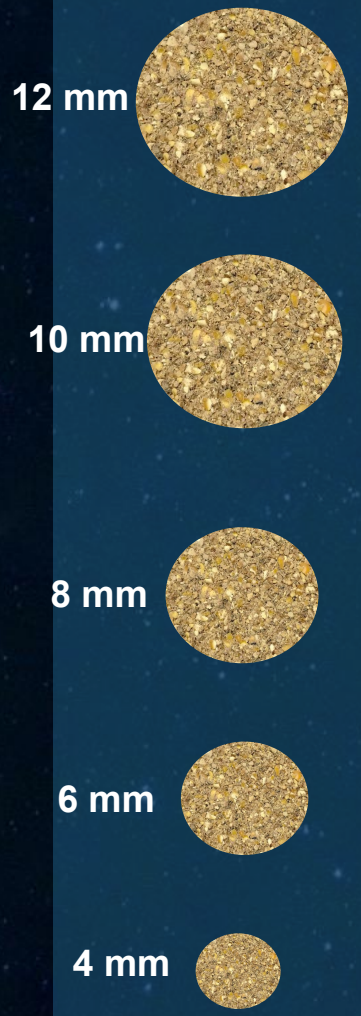
look it

choose it

Feed selection is a natural conduct by hens

Training to eat fine particles: why?

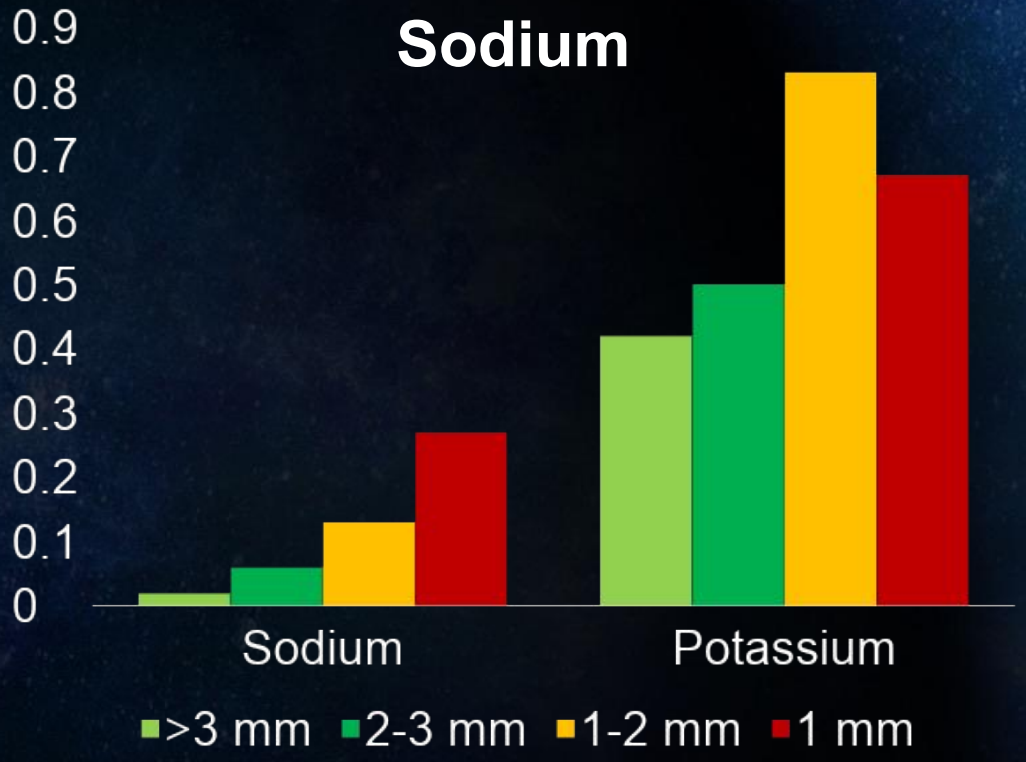


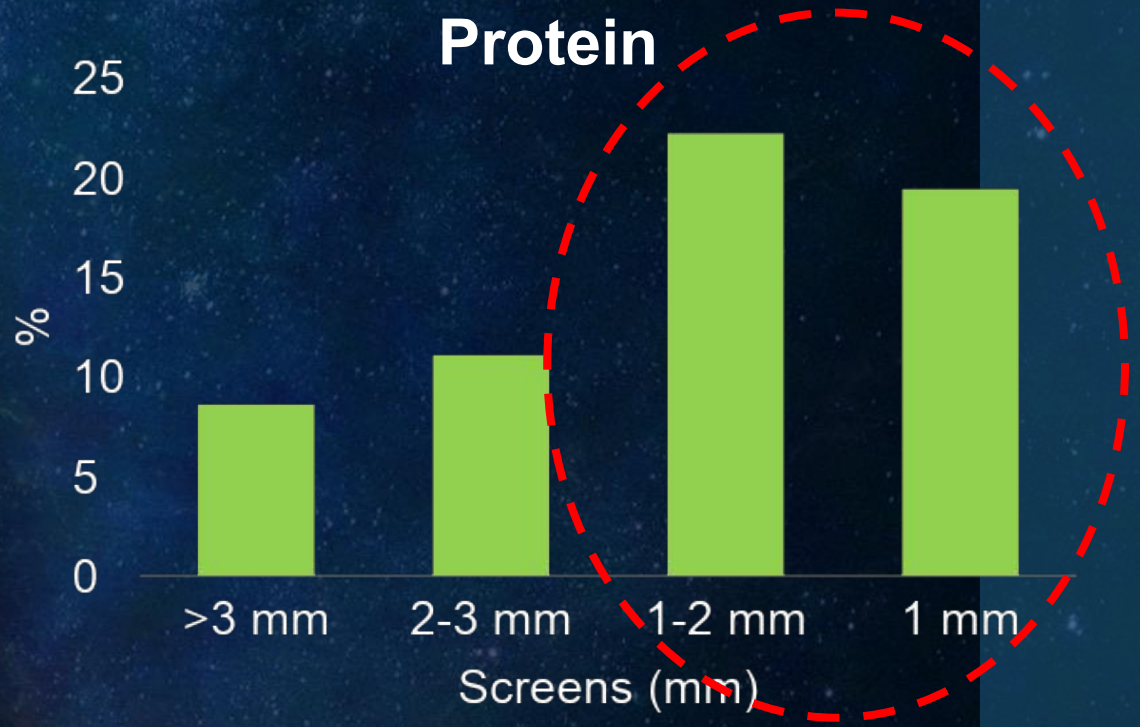


Source: Herrera et al., 2018

Training to eat fine particles: why?

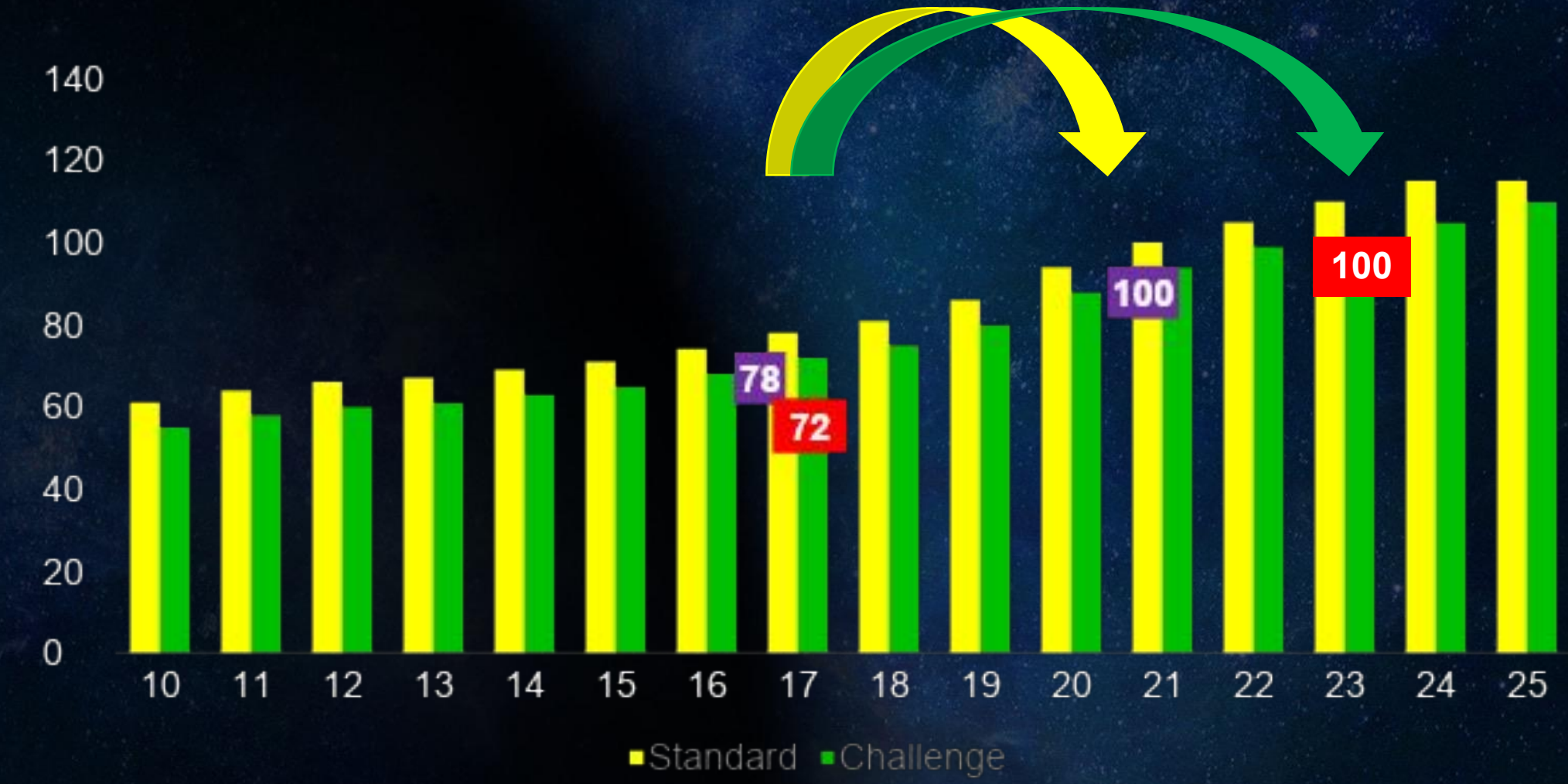
Nutrients present in the fine particles





Very important component in feather pecking, nervousness, production…

Feed Intake evolution: why?



Intake development prevents performance challenges

Developer phase

Recommendations

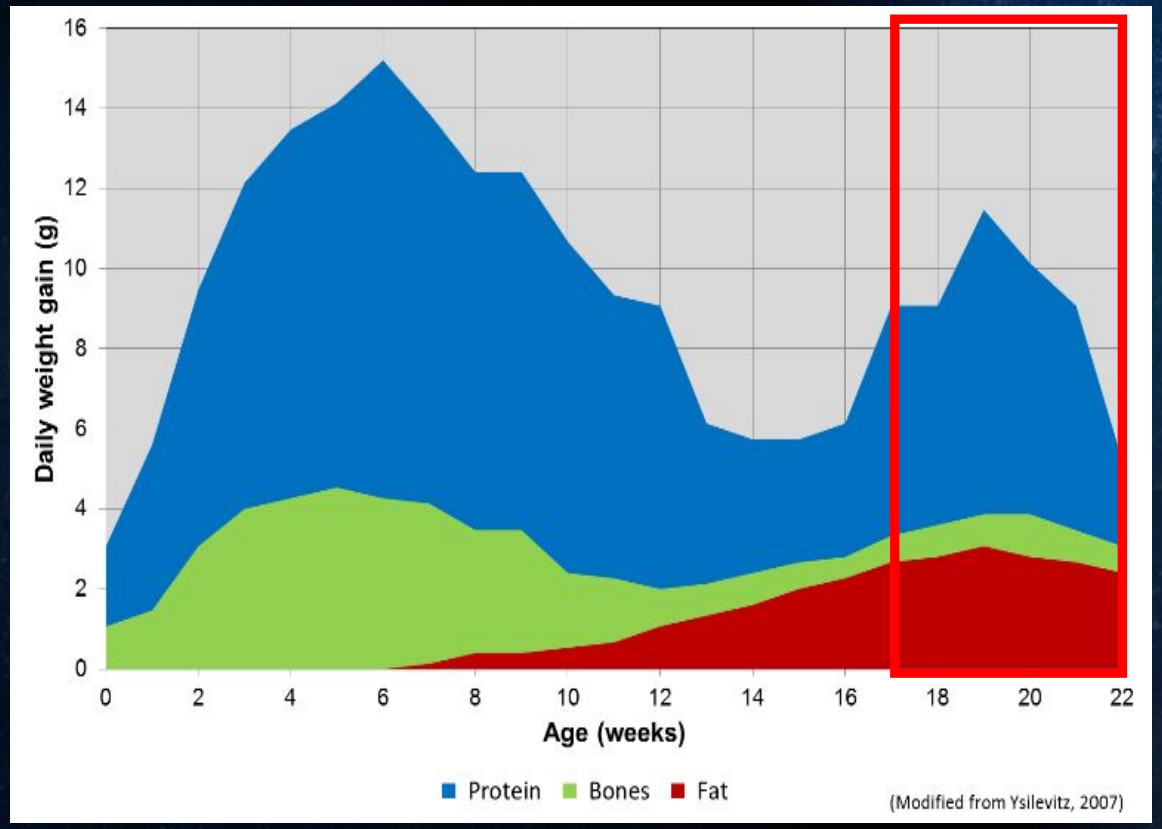
- ✔ **NO** standard Body weight
- ✔ **NO** change feed type
- ✔ **NO** light stimulation

Factors to review

- ✔ **Drinker space**
- ✔ **Feeder space**
- ✔ **Stocking density**
- ✔ **House's temperature**

Important details affect feed consumption

Transition phase – hybrid feed



¿What happen?

¡ several changes = high stress !

Hormonal changes

+

Development organs
(liver and reproductive tract)

+

Begin egg production

=

Increase daily requirements

Feed intake must increase simultaneously

Hybrid feed - Concept

Transition feed for transition phase

Nutrients		
ME	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
Av. P	%	0.44
Crude Fibre	%	3.5-4.0
Salt	%	0.28

→ Low energy

High amino acids

- Enough to lay on egg
- 60% carbonate in coarse particle form

→ Keep the feed intake development

→ Stimulate feed intake

How to use hybrid feed

An easy option

Nick chick and egg size

H&N R&d: quickly egg size development trial – part 1

- Housing
  - Number cages: 144
  - Number of birds: 720
  - Feeder space: 9.6 cm / bird (3.78 in)

- Feeding
  - Arrival: **developer feed.**
  - At light stimulation (1250g BW): **Hybrid feed**
  - At 21 weeks changed to **layer 1**
  - At 25 weeks start the **treatments**

- Treatments
  - Energy: 2810 kcal / kg
  - Amino acids (Lys mg): 590 / 670 / 750 / 830

Light stimulation at:
1250 grams
Light hours at rearing: 12 hours
Stimulation: +2+1+1 / week

Hybrid feed

	%
Energy	2,700
Dig. Lys	0.80
Dig. Met	0.40
Dig. Met + Cis	0.72
Dig. Thr.	0.56
Dig. Trp.	0.18
Dig. Ile.	0.64
Dig. Val	0.70
Dig. Arg	0.83
Crude fibre	2.75
Calcium	3.80
Av. P.	0.47
Na	0.20
Cl	0.20

Corn/ SBM /Wheat bran

Salt: 0.28% Min-Max

Oil: 1.6% Min

Coarse $CaCO_3$ 60%

21 wks

Corn/ SBM /Wheat bran

Salt: 0.28% Min-Max

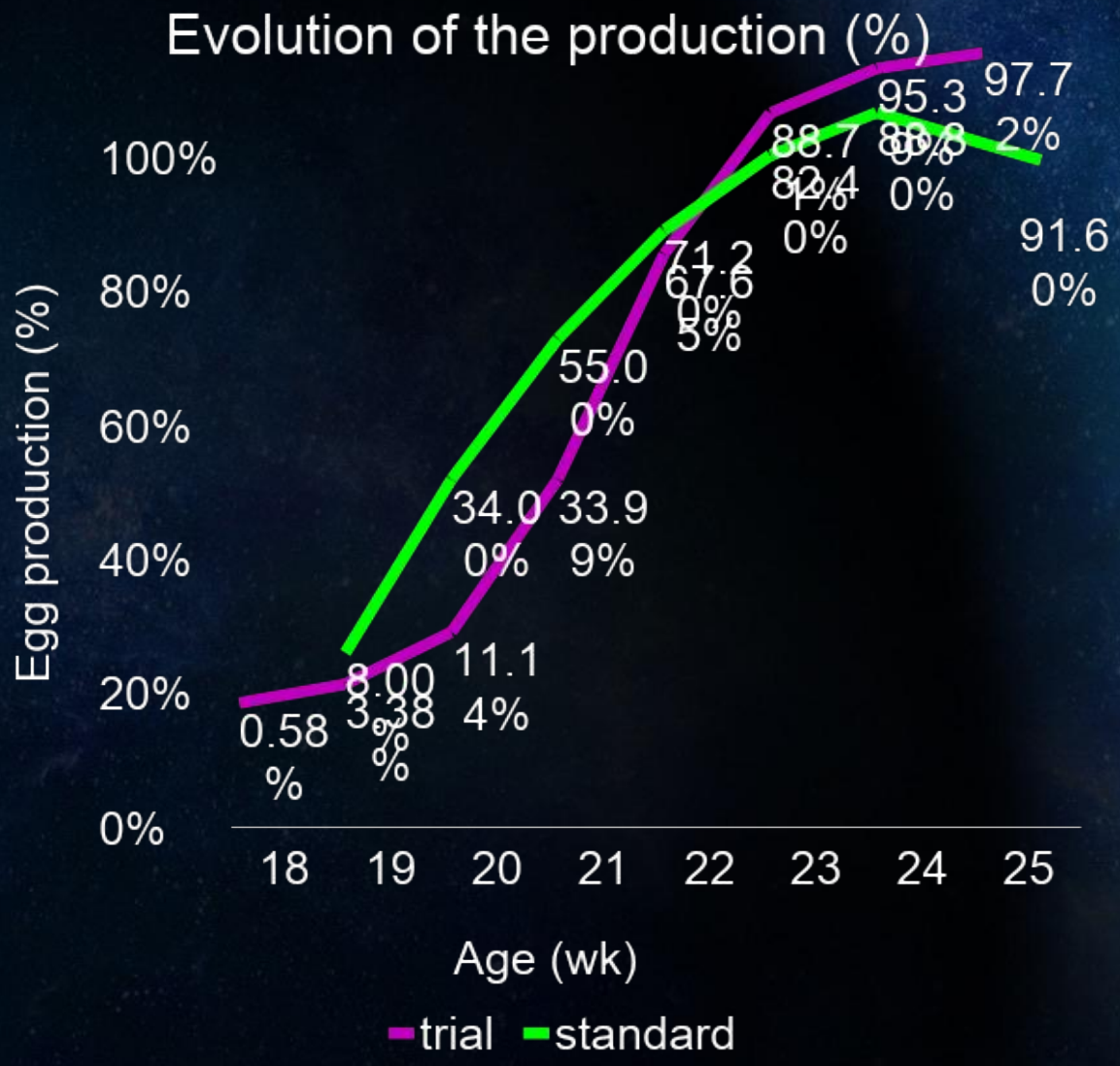
Oil: 2%

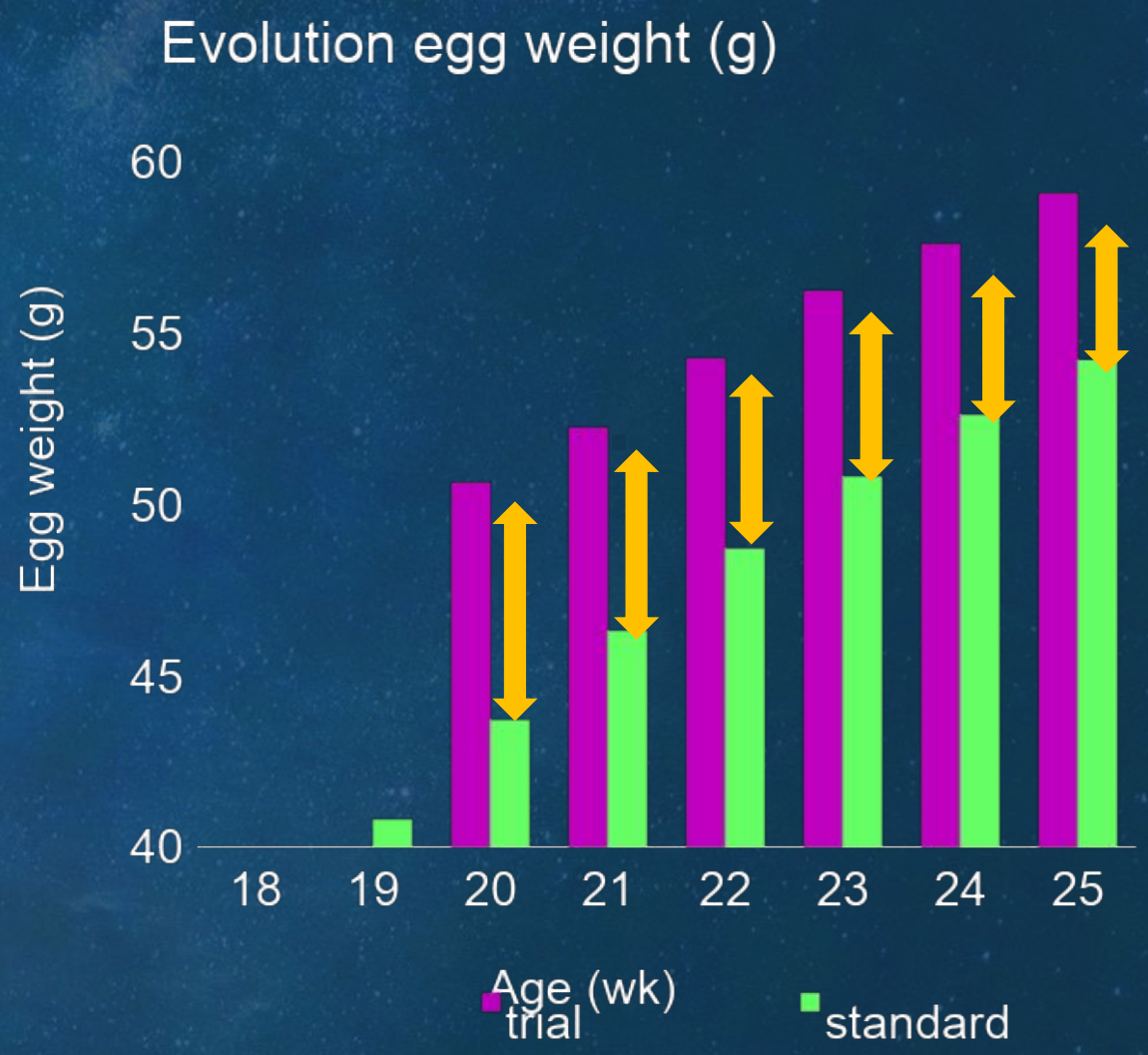
Coarse CaCO3 60%

Phase 1 feed

	%
Energy	2,810
Dig. Lys	0.76
Dig. Met	0.38
Dig. Met + Cis	0.69
Dig. Thr.	0.53
Dig. Trp.	0.17
Dig. Ile.	0.61
Dig. Val	0.67
Dig. Arg	0.79
Crude fibre	2.50
Calcium	3.65
Av. P.	0.40
Na	0.17
Cl	0.17

Onset of production…

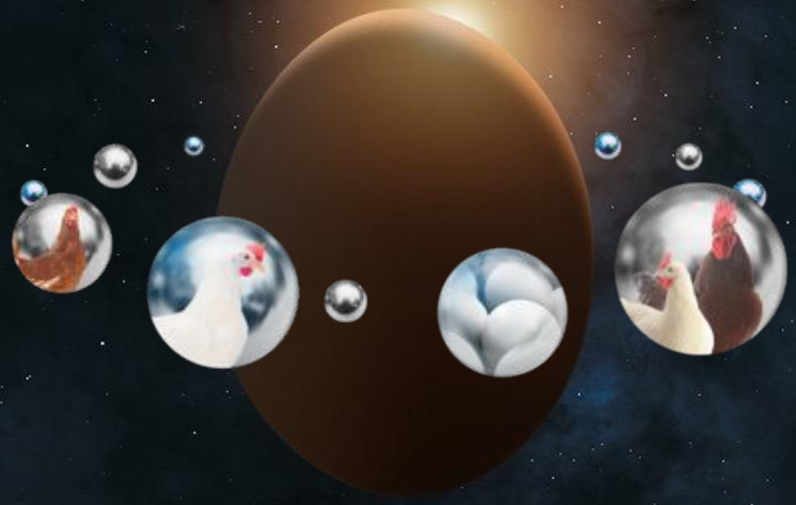




Summary - rearing

- The pullet rearing ends up at 22 weeks.
- The structure of the bird is key in any type of production.
- Feed intake development is key to longevity.
- Feed intake development doesn’t mean bad efficiency in production.
- The stock density of birds is essential for the success of rearing…and production
- New approach at the start of production, Hybrid feed.

Thank you for your attention



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