

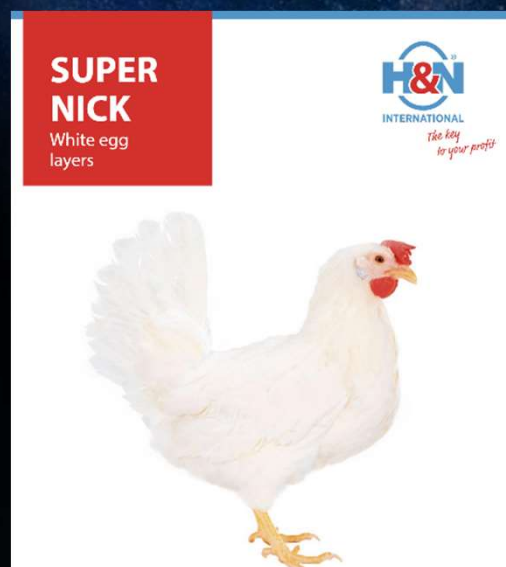
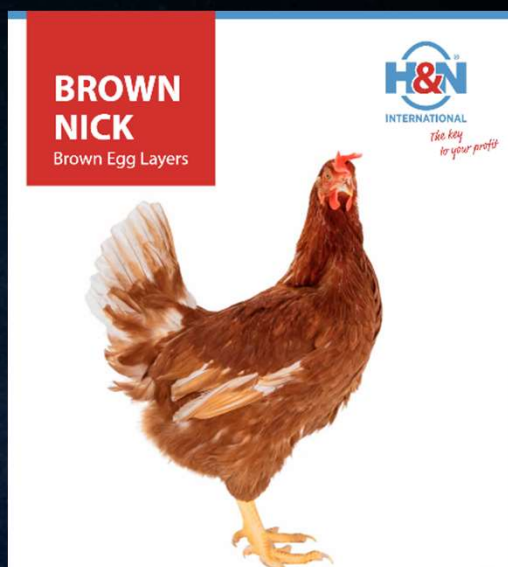


Nutritional requirements of laying hens

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Technical Service Nutrition Europe & America

H&N British layer academy 2024

H&N layers requirements



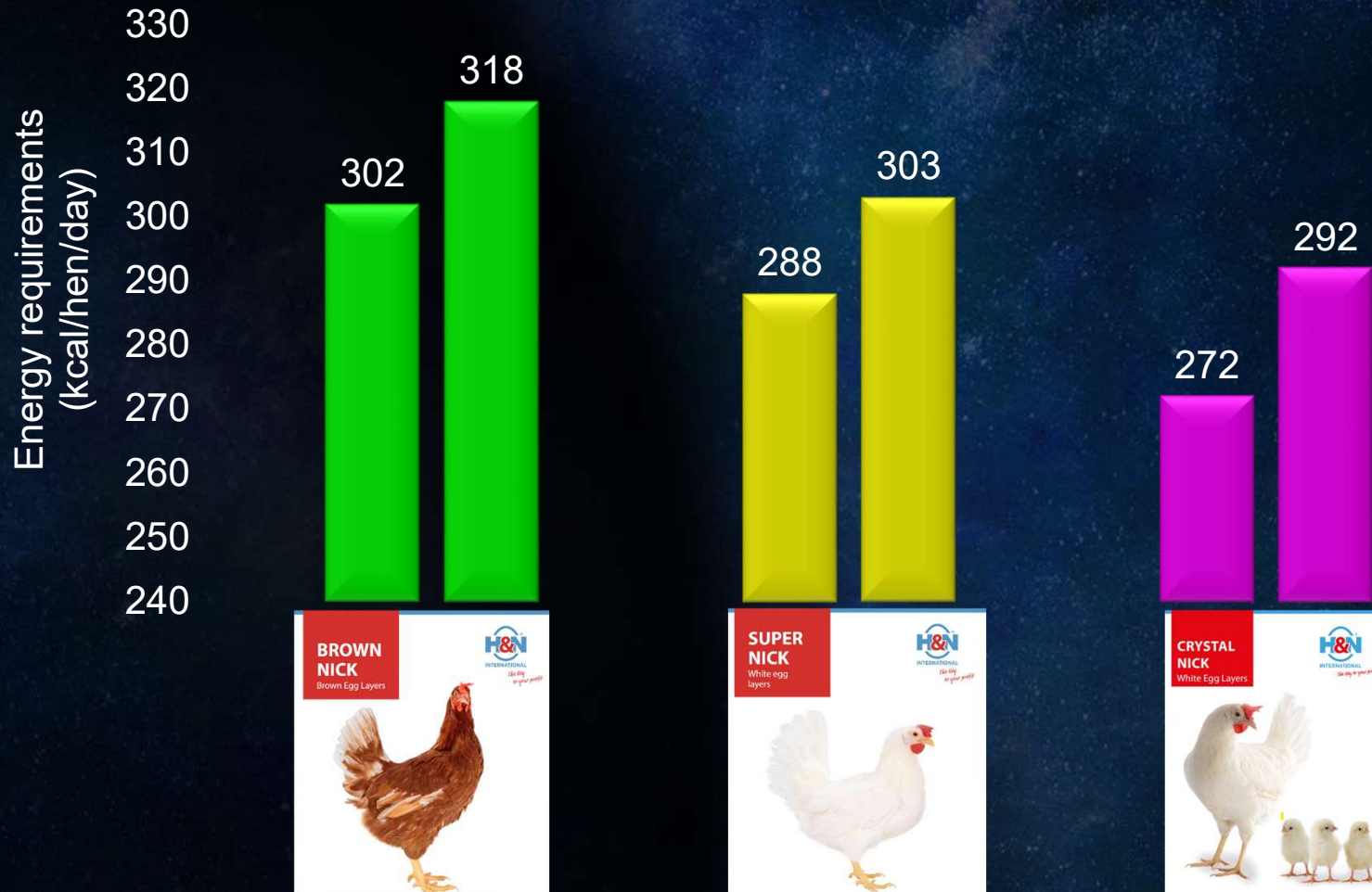
- Energy
- Amino acids
- Minerals (Ca/P)

Are the energy requirements between white and brown laying hens different?

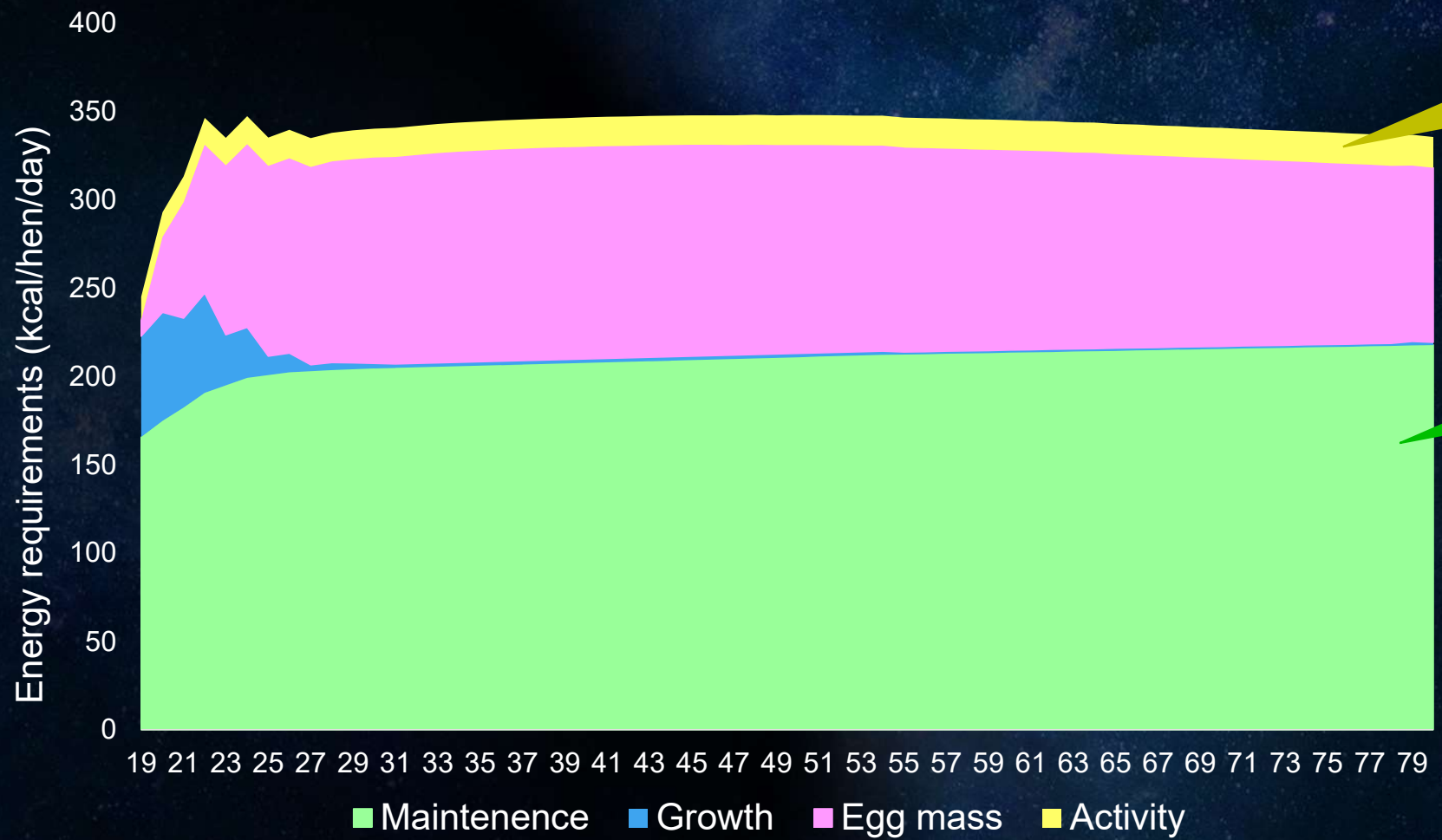
It depends

Why?

Daily energy requirements of the bird



Daily energy requirements of the bird



Cage free or heat stress

Body weight!!!

65% energy intake will be used for maintenance

■ Maintenance ■ Growth ■ Egg mass ■ Activity

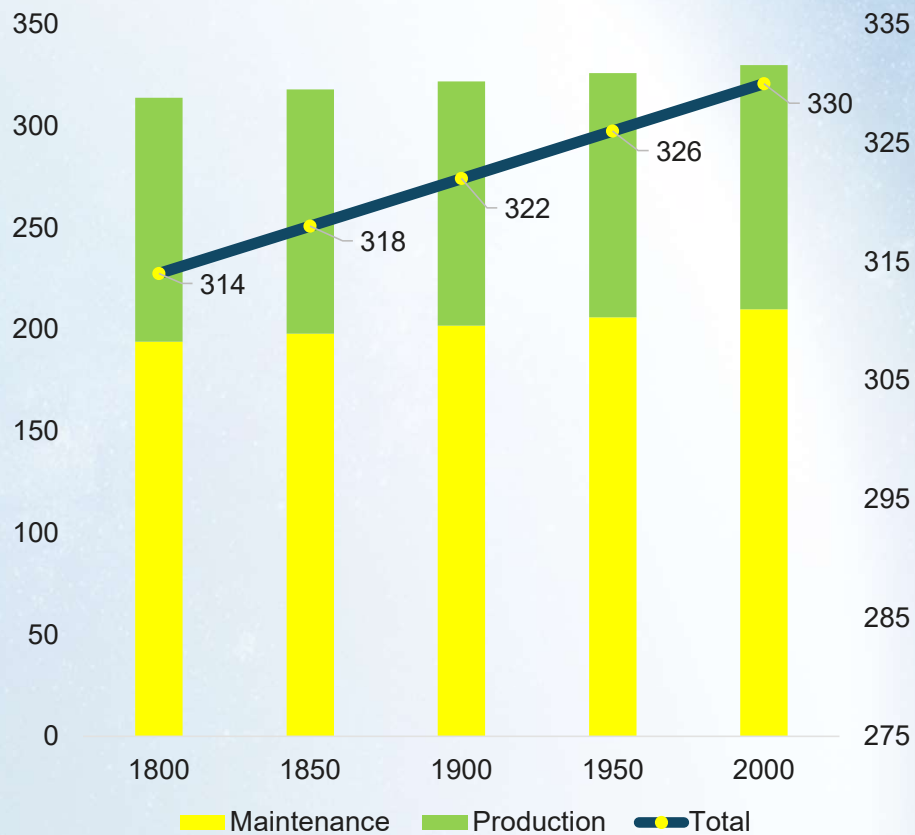
Slide 5

ES0 **Cam,biar actividad con otro nombre**
Emilio Scappaticcio, 2023-06-11T06:44:01.713

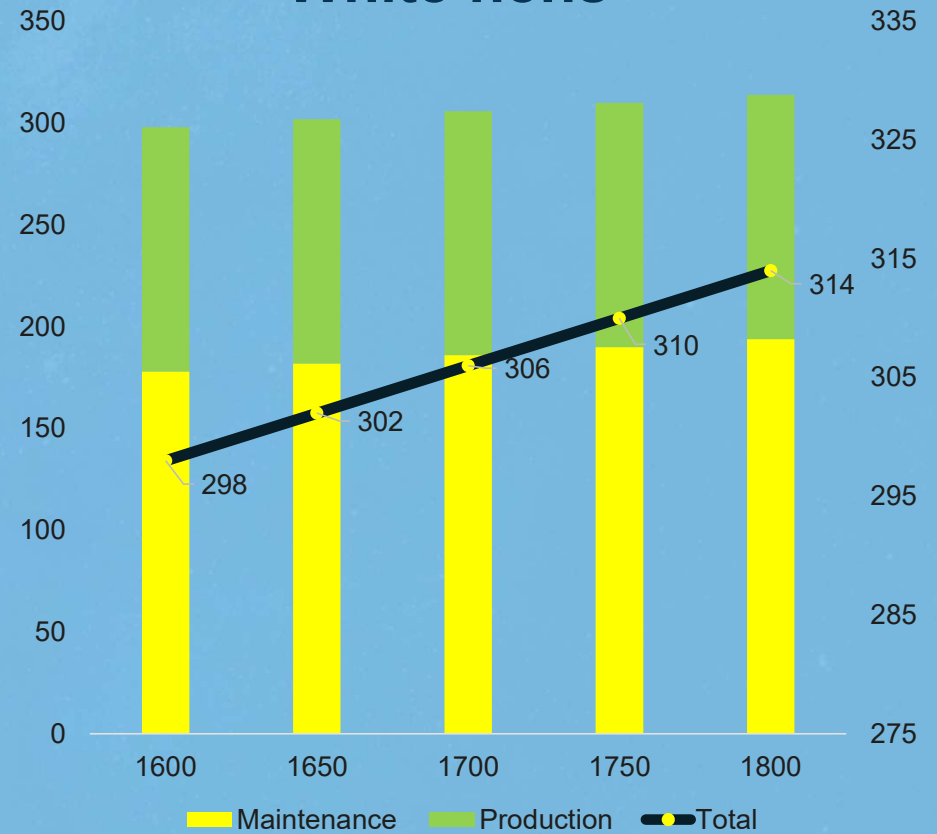
XA0 0 **Stress calorico**
Xabier Arbe, 2023-06-14T06:50:41.089

An example...

Brown hens



White hens



± 4 kcal/hen/day each 50 g body weight

Are the energy requirements between white and brown laying hens different?

It depends

Why?

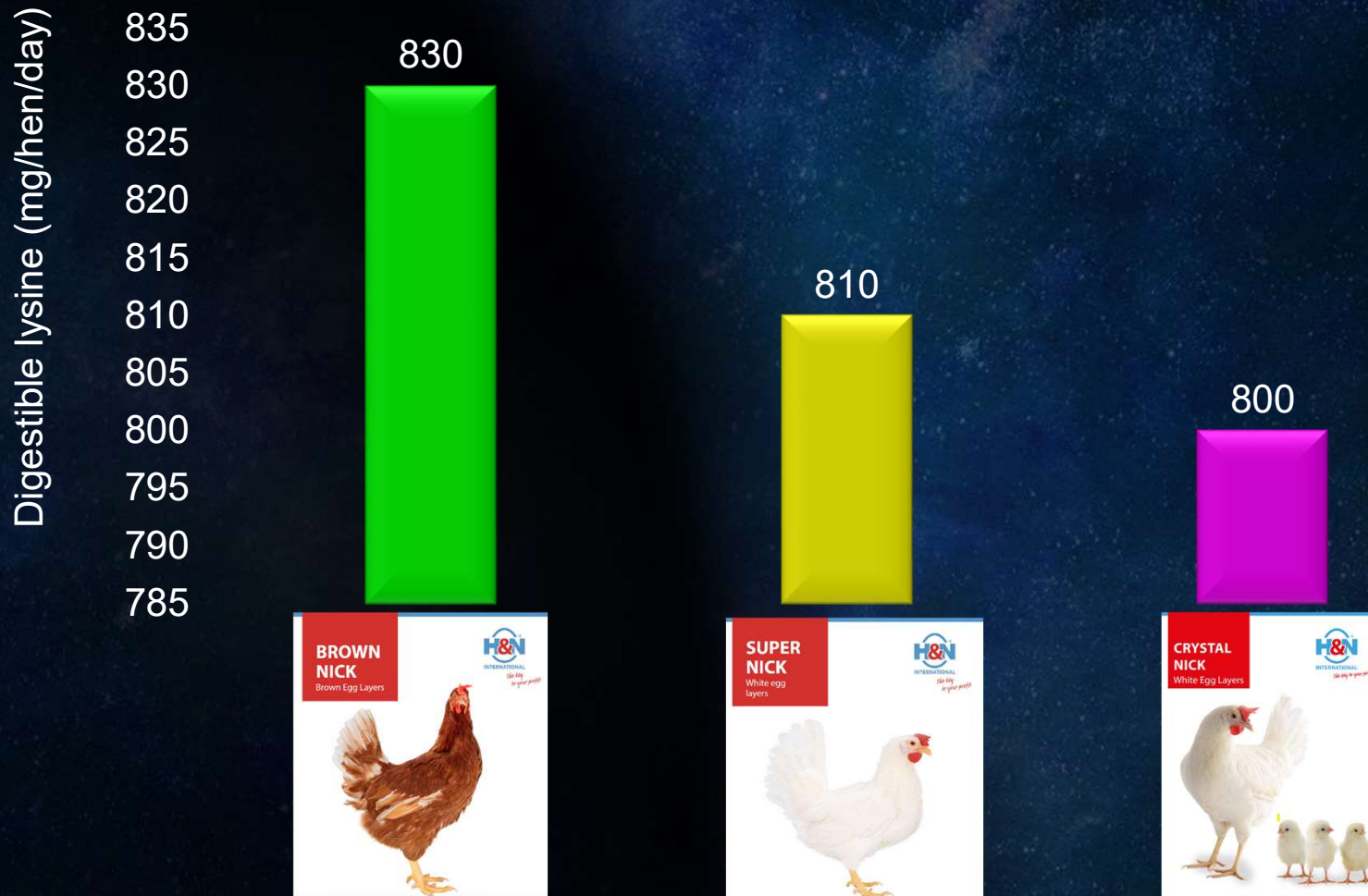
The body weight of the bird drives the energy requirement

Are the amino acids requirements between white and brown laying hens different?

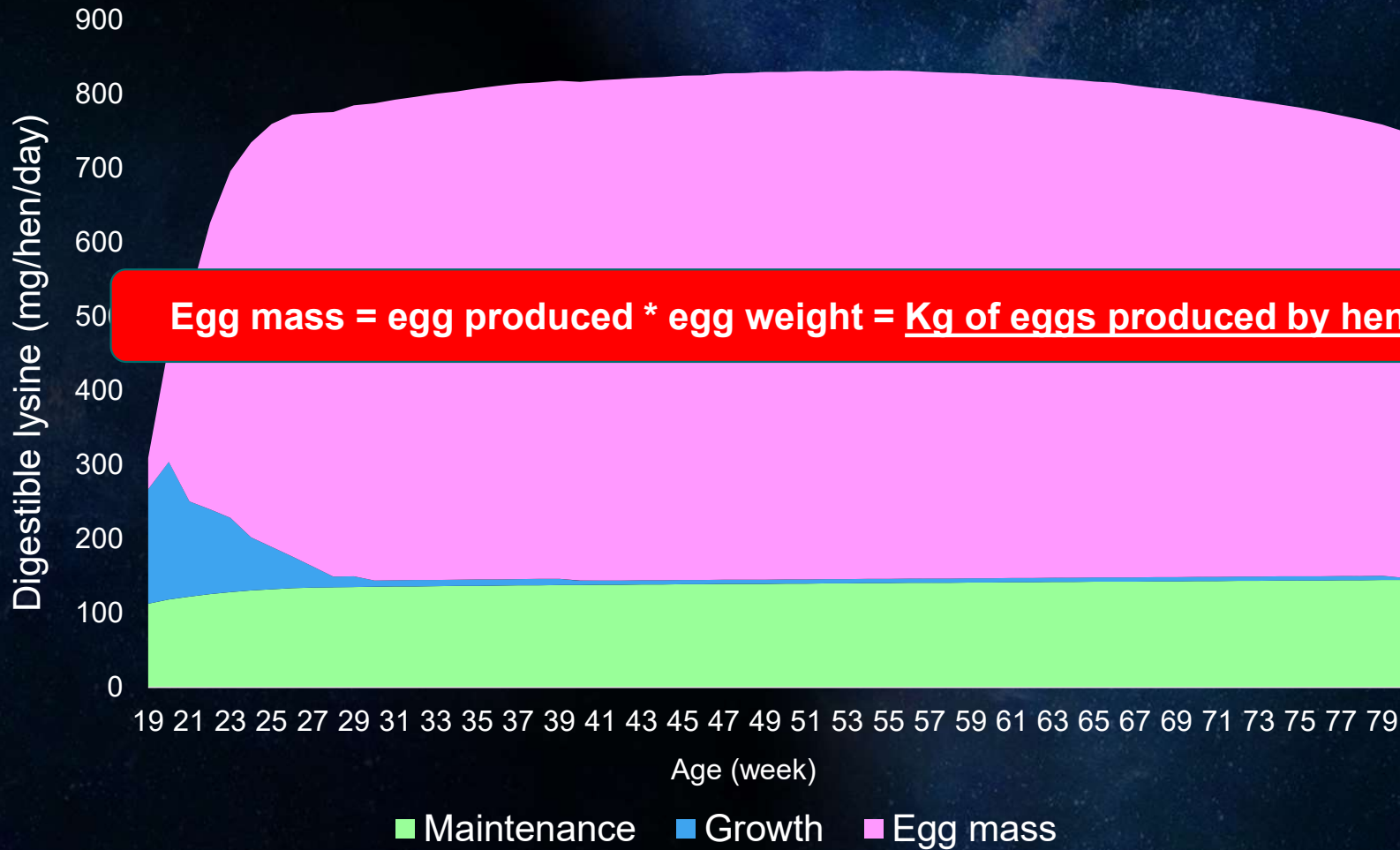
It depends

Why?

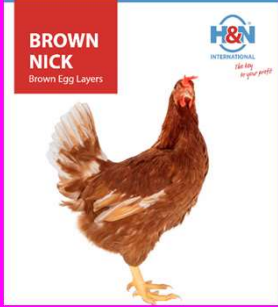
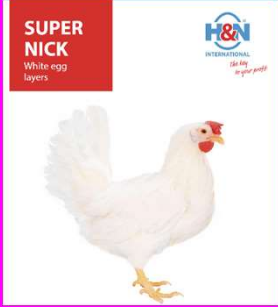

Daily ammino acids requirements of the birds



Daily requirements of digestible lysine of the bird



An example...performance goals at 45 weeks of age

			
Rate of lay (%)	93,9	94,6	96,9
Egg weight (g)	64,2	63,3	60,2
Egg mass ¹	60,3 (9,95)	59,9 (9,67)	58,3 (9,20)

¹Egg mass per day (kg/eggs/day) and egg mass cumulatively (kg of eggs produced until 45 weeks of age)

Are the amino acids requirements between white and brown laying hens different?

It depends

Why?

The egg mass produced from the bird drives the AA requirement

Are the minerals requirements between white and brown laying hens different?

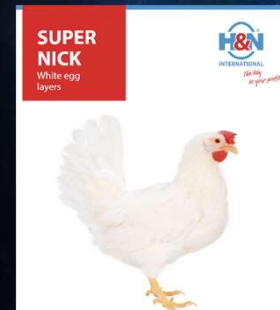
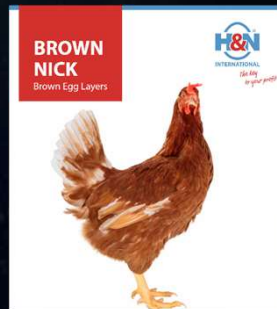
It depends

Why?

Daily minerals requirements of the birds

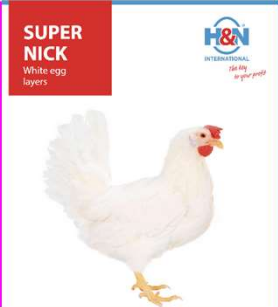
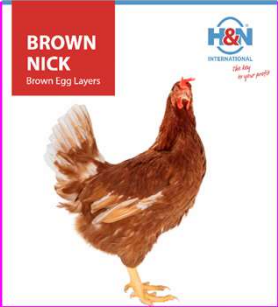
Table 20: Ca and P needs during laying period

	Before peak	Peak to 45 weeks	45 – 70 weeks	> 70 weeks
Ca (g/bird/day)	3.80	4.00	4.30	4.50
Phosphorus* (mg/bird/day)	600	540	480	430
Av. Phosphorus (mg/bird/day)	420	380	340	300
Dig. Phosphorus (mg/bird/day)	360	325	290	255



An example...at 45 weeks of age

Feed used 2850 kcal/kg



Feed intake (g)	110	106	102
Calcium requirements (g/bird/d)	4,00		
Av. Phosphorus (mg/bird/d)			
Calcium (%)	3,6%	3,7%	3,9%
Av. Phosphorus (%)	0,34%	0,36%	0,37%

Are the minerals requirements between white and brown laying hens different?

It depends

Why?

The feed intake target of the bird drives the minerals requirement to use in the formulate

Management of the feed formulate

Objective feed intake Brown Nick: 110 g

Example n1:
2 flocks (SN and BN)
1 formulate for all flocks (BN)

formula	
AMEn	2.850 kcal/kg
Dlys	0,755%
Ca	3,6%
Av. P	0,344%

Management of the feed formulate

Example n1:
2 flocks (SN and BN)
1 formulate for all flocks (BN)

Objective feed intake Brown Nick: 110 g

formula	
AMEn	2.850 kcal/kg
Dlys	0,755%
Ca	3,6%
Av. P	0,344%

Parameter	Brown Nick		Super Nick	
	Intake	Requirement	Intake	Requirement
Feed Intake				
Dlys Intake				
Ca				
Av. P				

Management of the feed formulate



Example n2:
2 flocks (SN and BN)
1 formulate for all flocks (SN)

Objective feed intake Super Nick: 105 g

formula	
AMEn	2.810 kcal/kg
Dlys	0,771%
Ca	3,8%
Av. P	0,36%

Management of the feed formulate



Example n2:
2 flocks (SN and BN)
1 formulate for all flocks (SN)

Objective feed intake Super Nick: 105 g

formula	
AMEn	2.810 kcal/kg
Dlys	0,771%
Ca	3,8%
Av. P	0,36%

Parameter	Results			
	Brown Nick		Super Nick	
	Intake	Requirement	Intake	Requirement
Feed Intake				
Dlys Intake				
Ca				
Av. P				

Management of the feed formulate

Example n3:

2 flocks (SN and BN)

1 formulate for each flock (SN and BN)



Objective feed intake: 110 g

formula

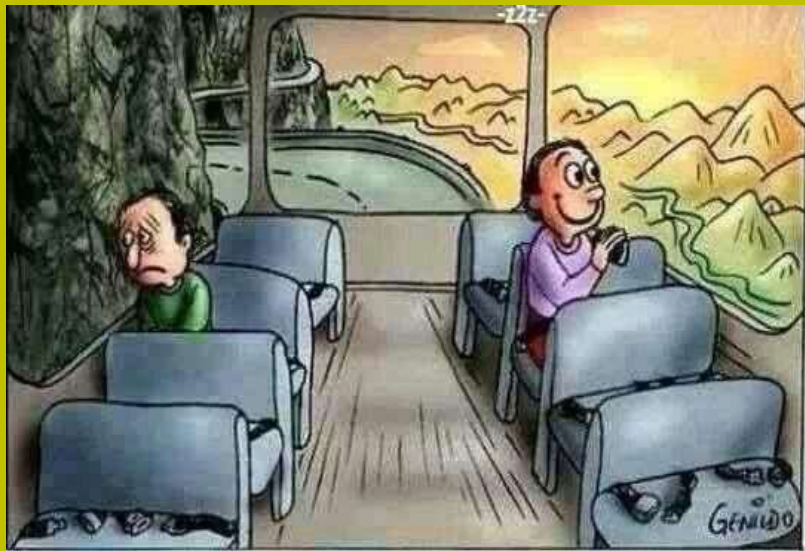
	BN	SN
AMEn (kca/kg)	2.850	2.680
Dlys	0,755%	0,736%
Ca	3,6%	3,6%
Av. P	0,35%	0,35%

Results

Parameter	Brown Nick		Super Nick	
	Intake	Requirement	Intake	Requirement
Feed Intake	110 g		110 g	
Dlys Intake	830 mg	830 ✓	810 mg	810 mg ✓
Ca	4,0 g	4,0 g ✓	4,0 g	4,0 g ✓
Av. P	380 mg	380 mg ✓	380 mg	380 mg ✓

Conclusions

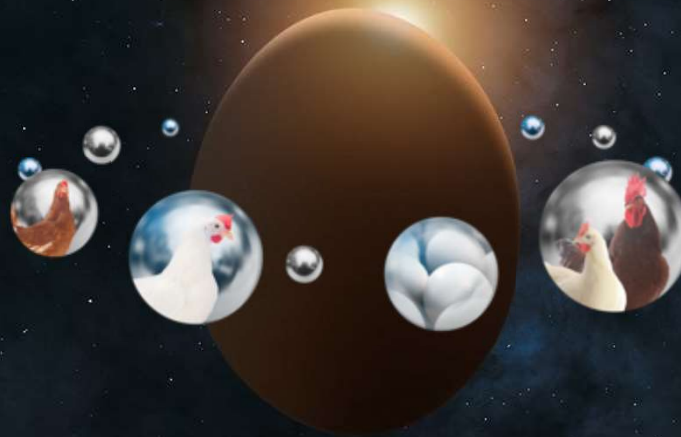
Life depends on how you look at it



Nutritional requirements of laying hens depends on:

- Body weight (energy requirements)
- Egg mass produced (AA requirements)
 - Target feed intake (minerals)

Thank you for your attention



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