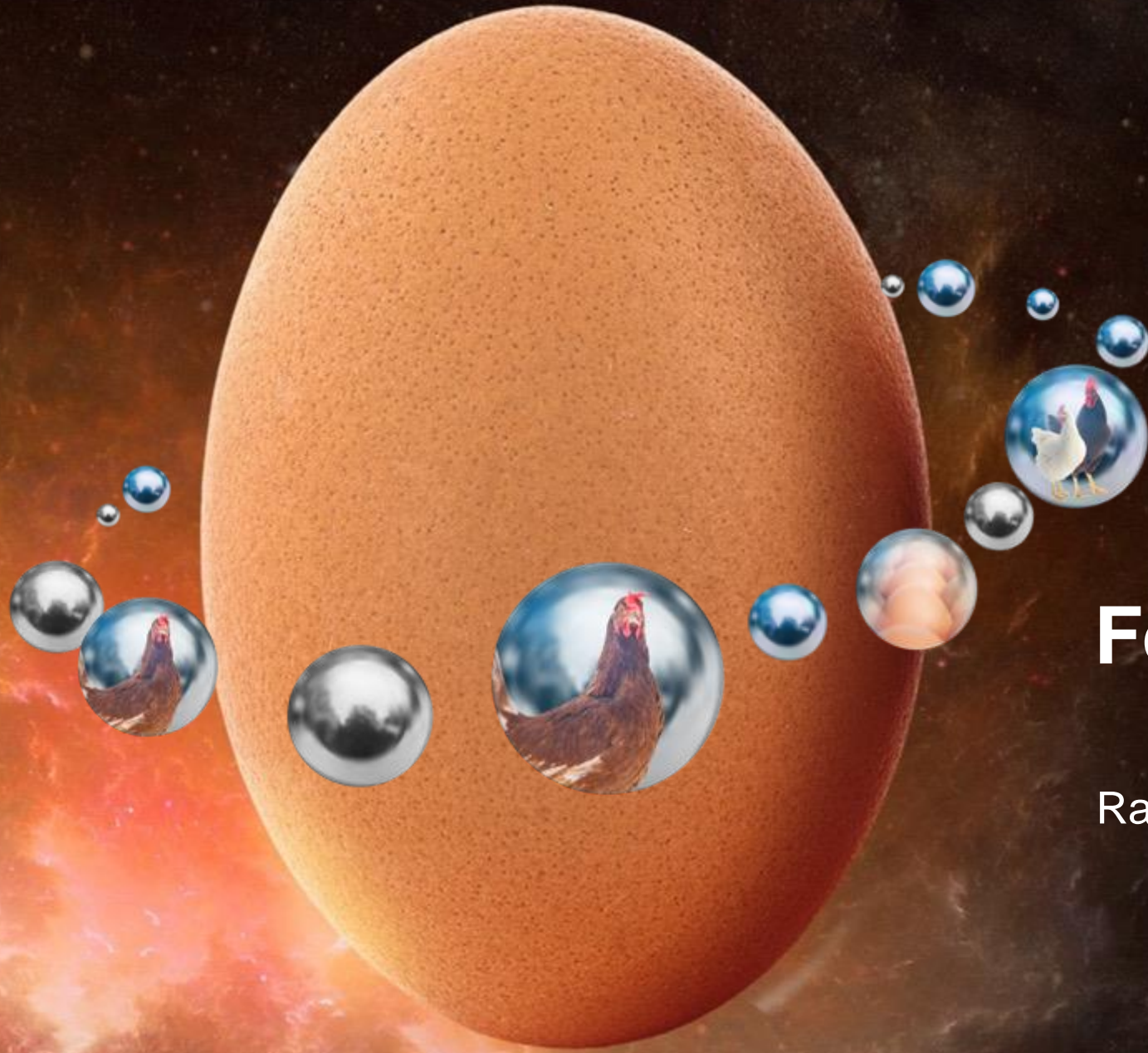


Racing to the 100 weeks

Get the car ready to race



**Evolution, not
really
improvements**

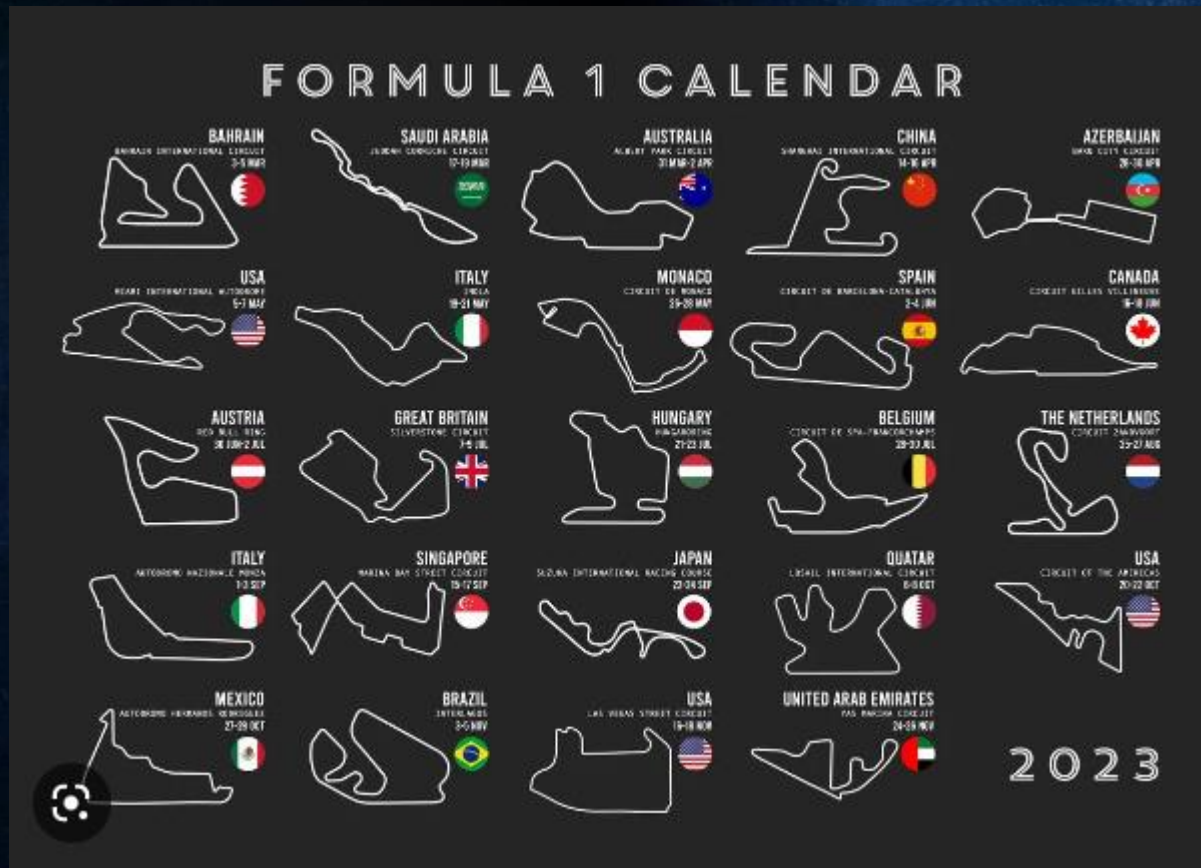


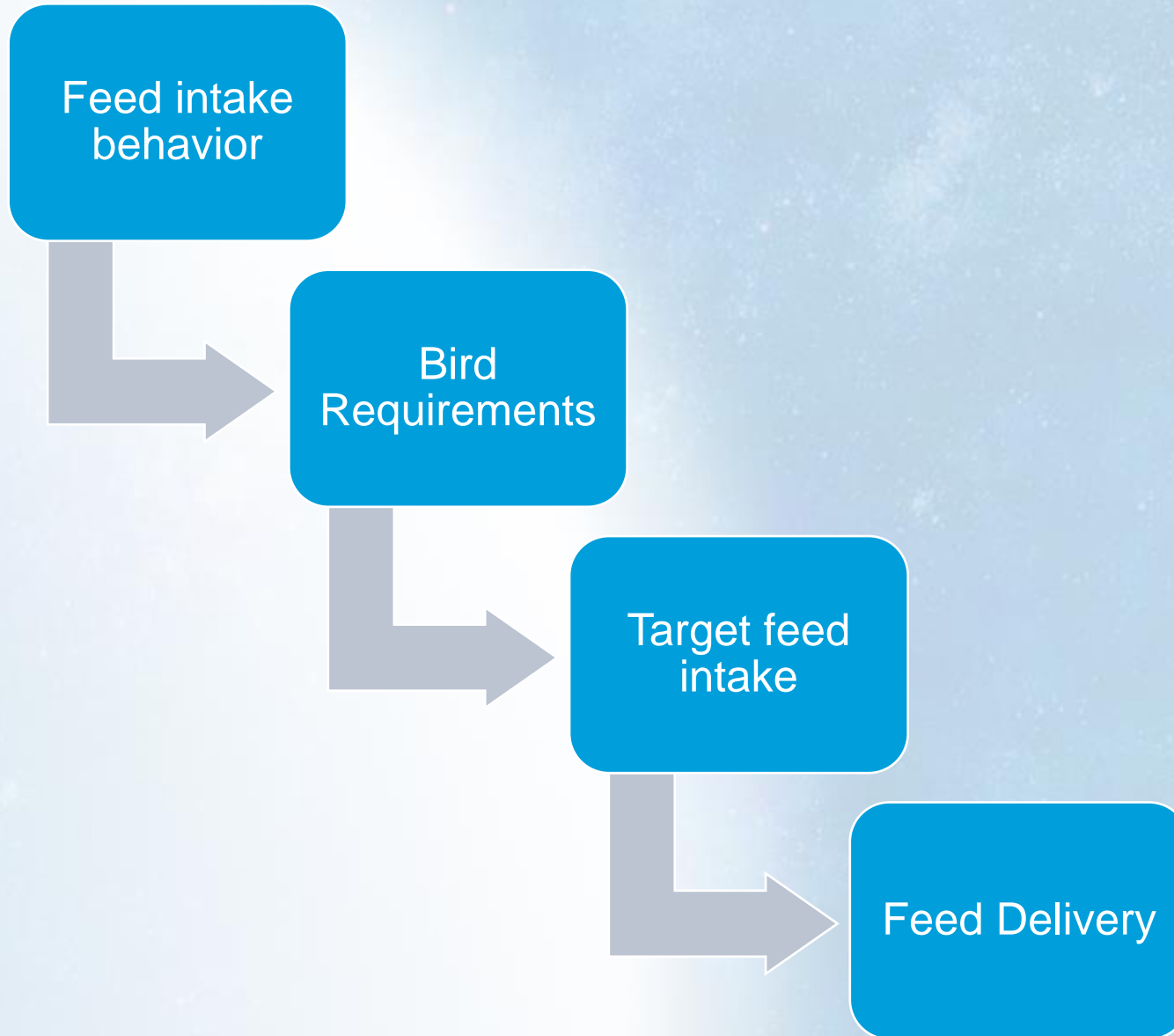
Feeding - production

Racing time

Not the same conditions

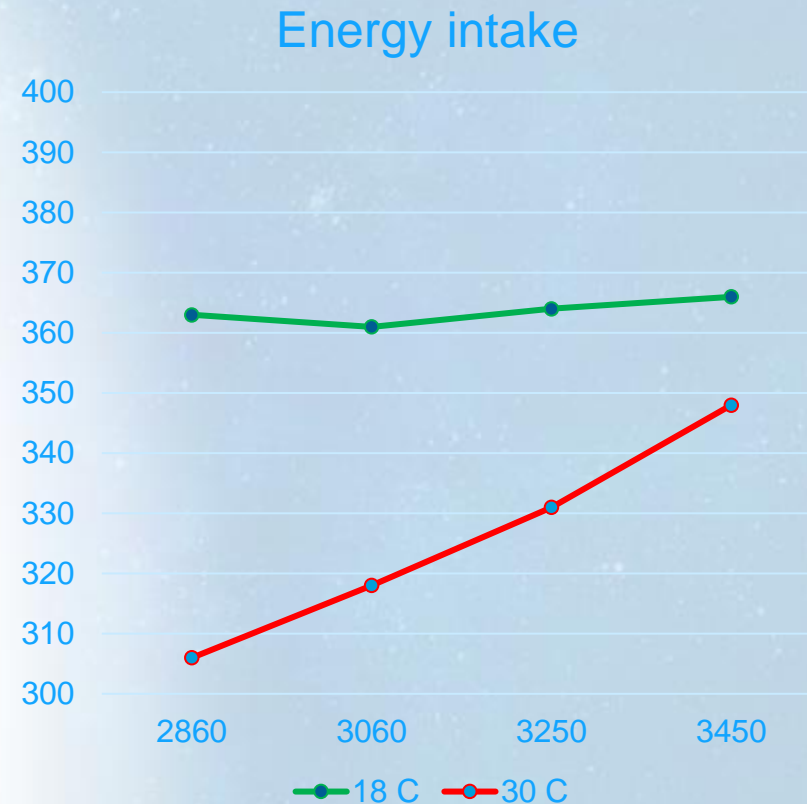
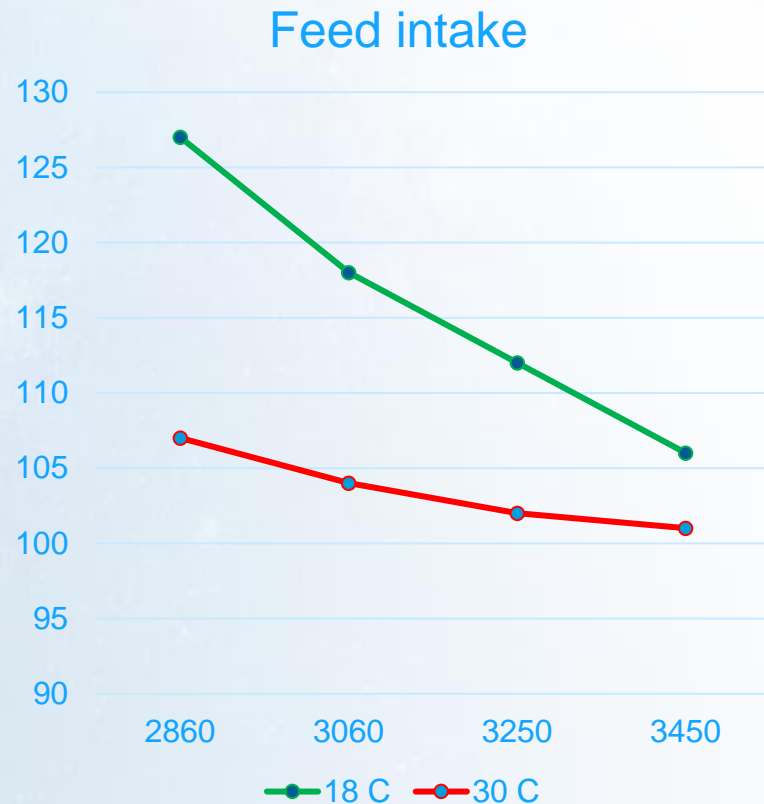
We need to adapt some details



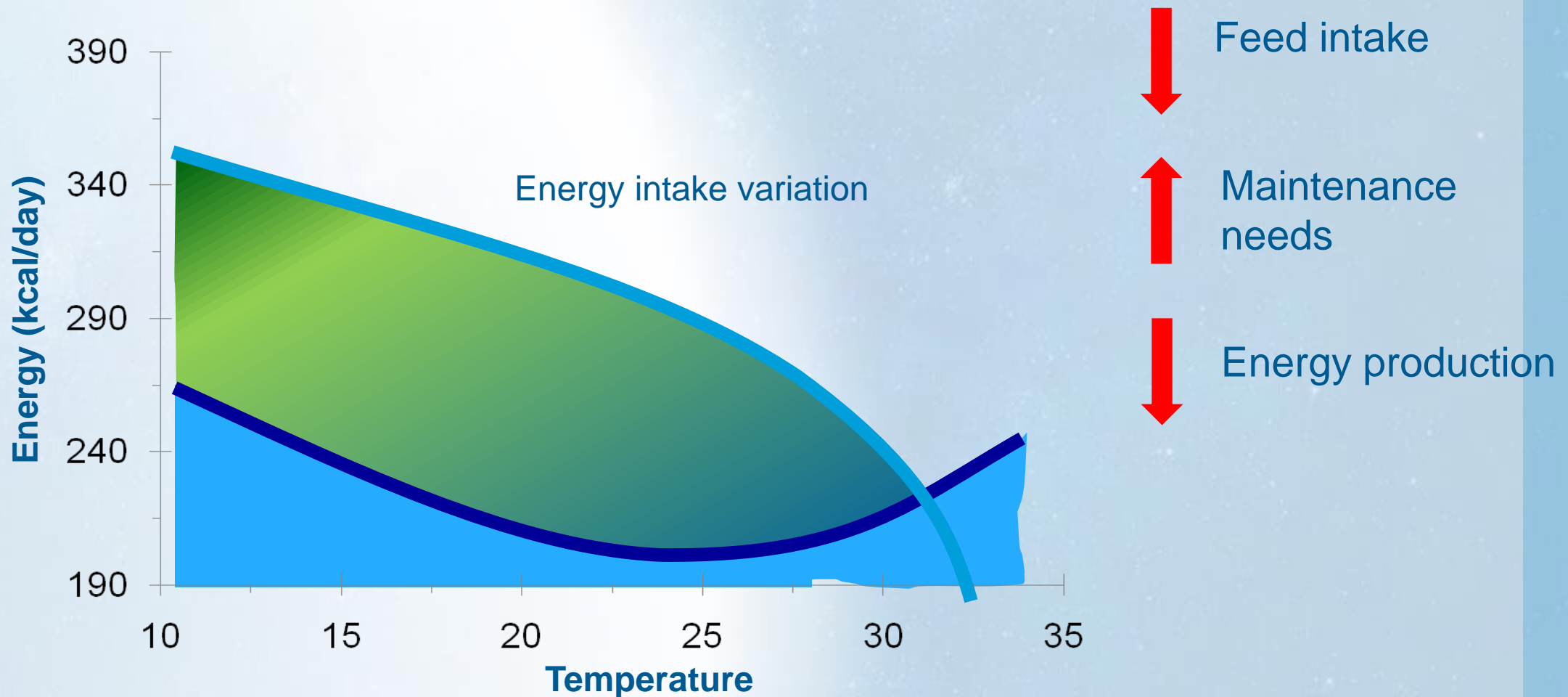


Energy is the driving force

Feed intake controls nutrient intake

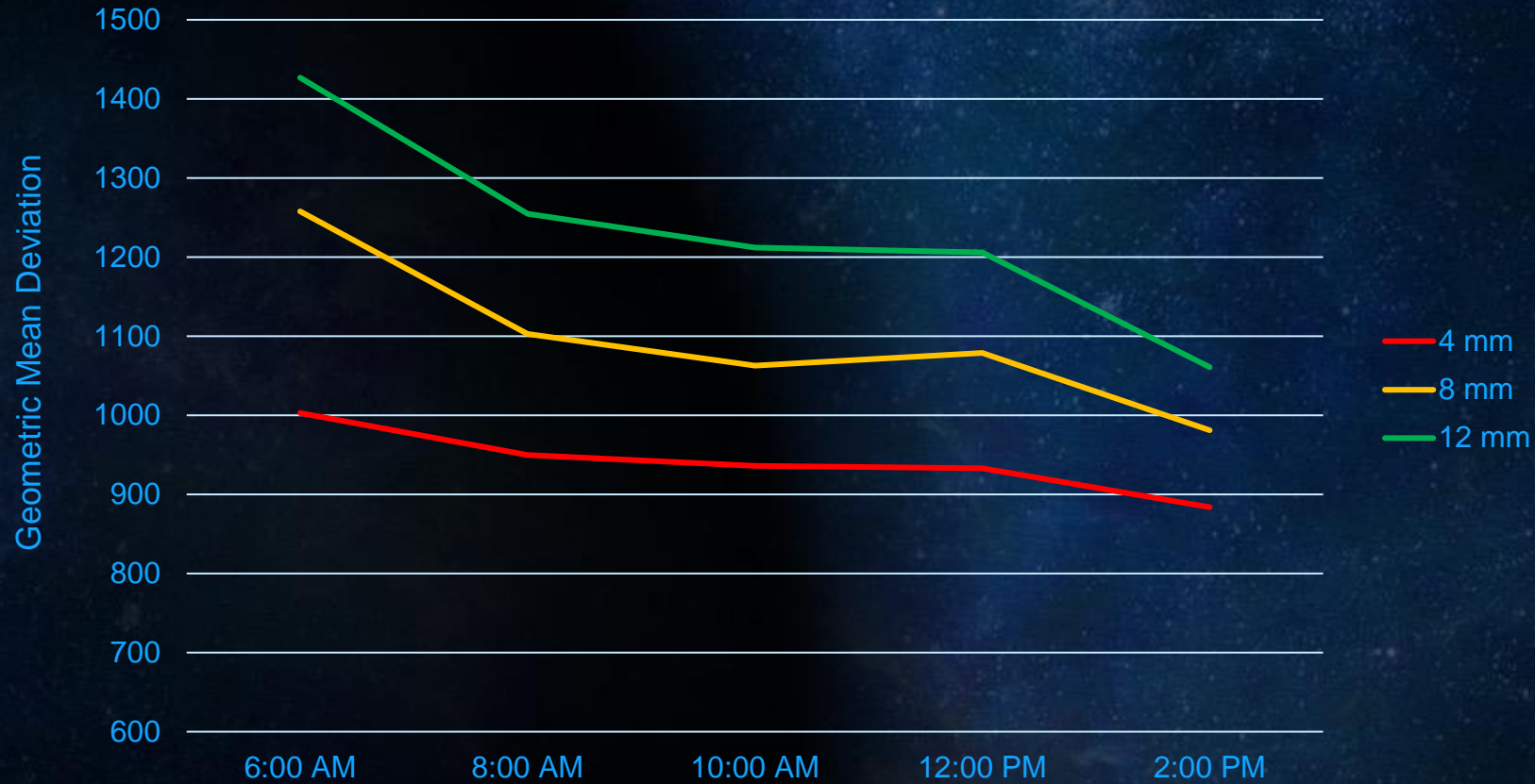


Feed intake vs temperature



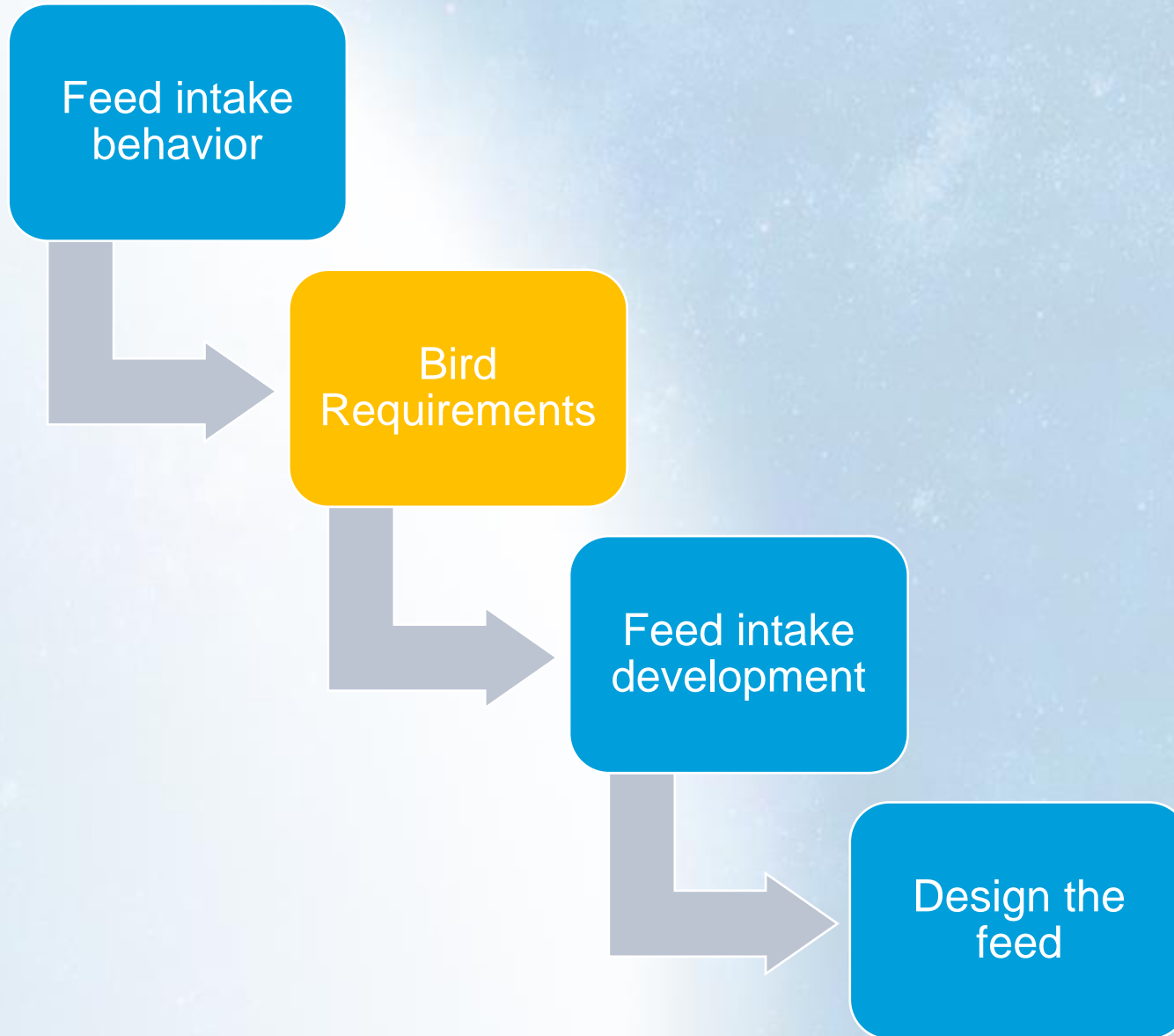
FEED INTAKE BEHAVIOR

GMD Evolution

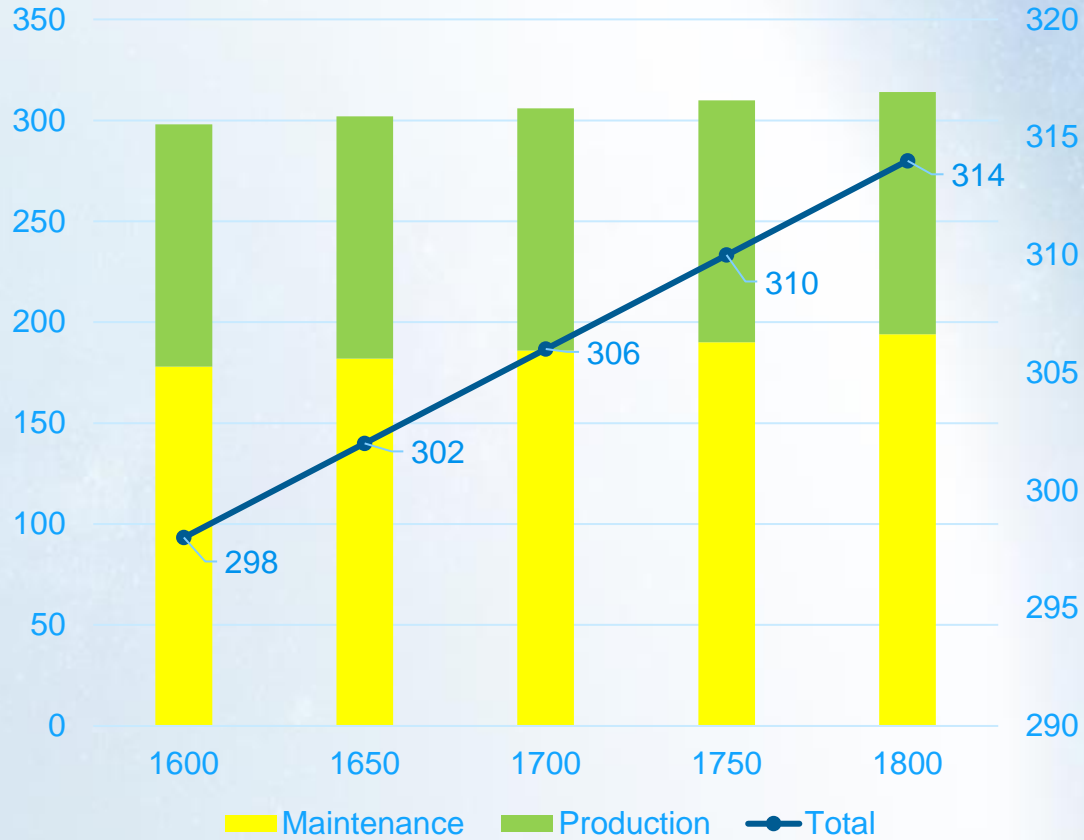


Love BIG particles!!!

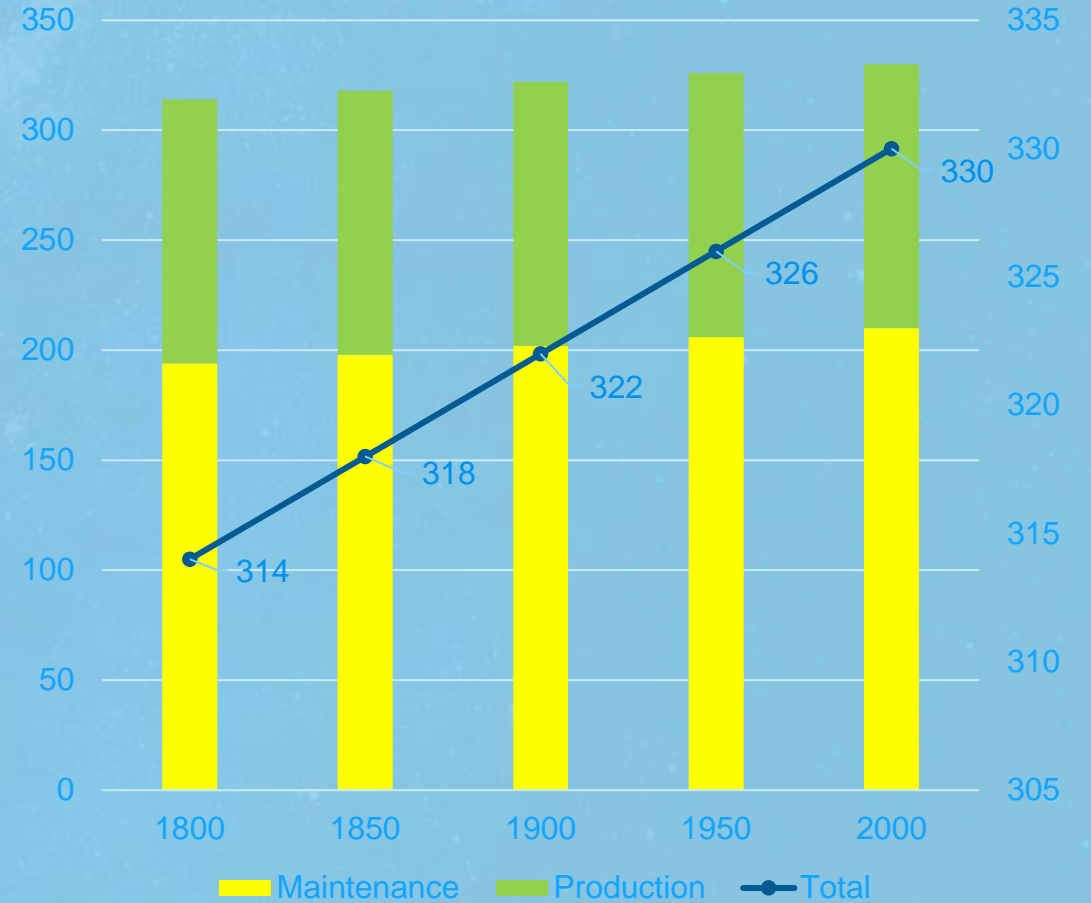
Adapted from Herrera et al
Poultry Science 97, 2018



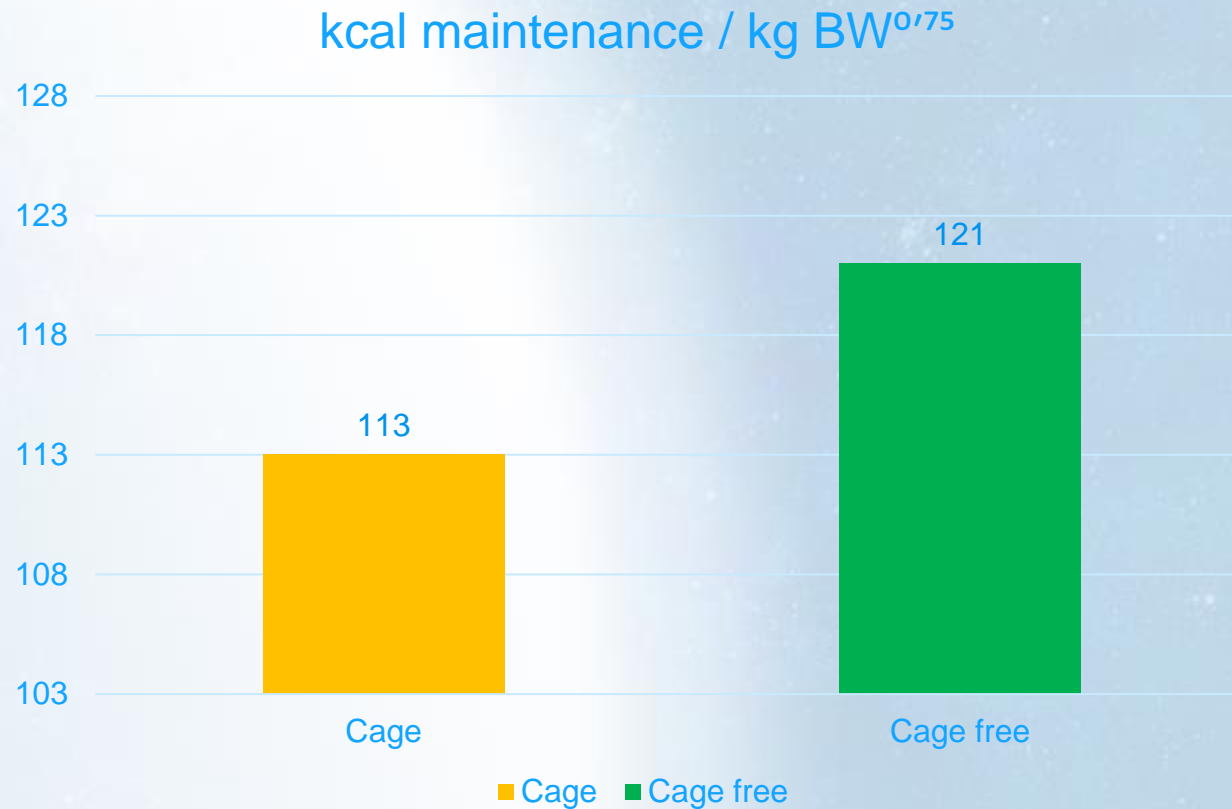
WHITE BIRDS



BROWN BIRDS

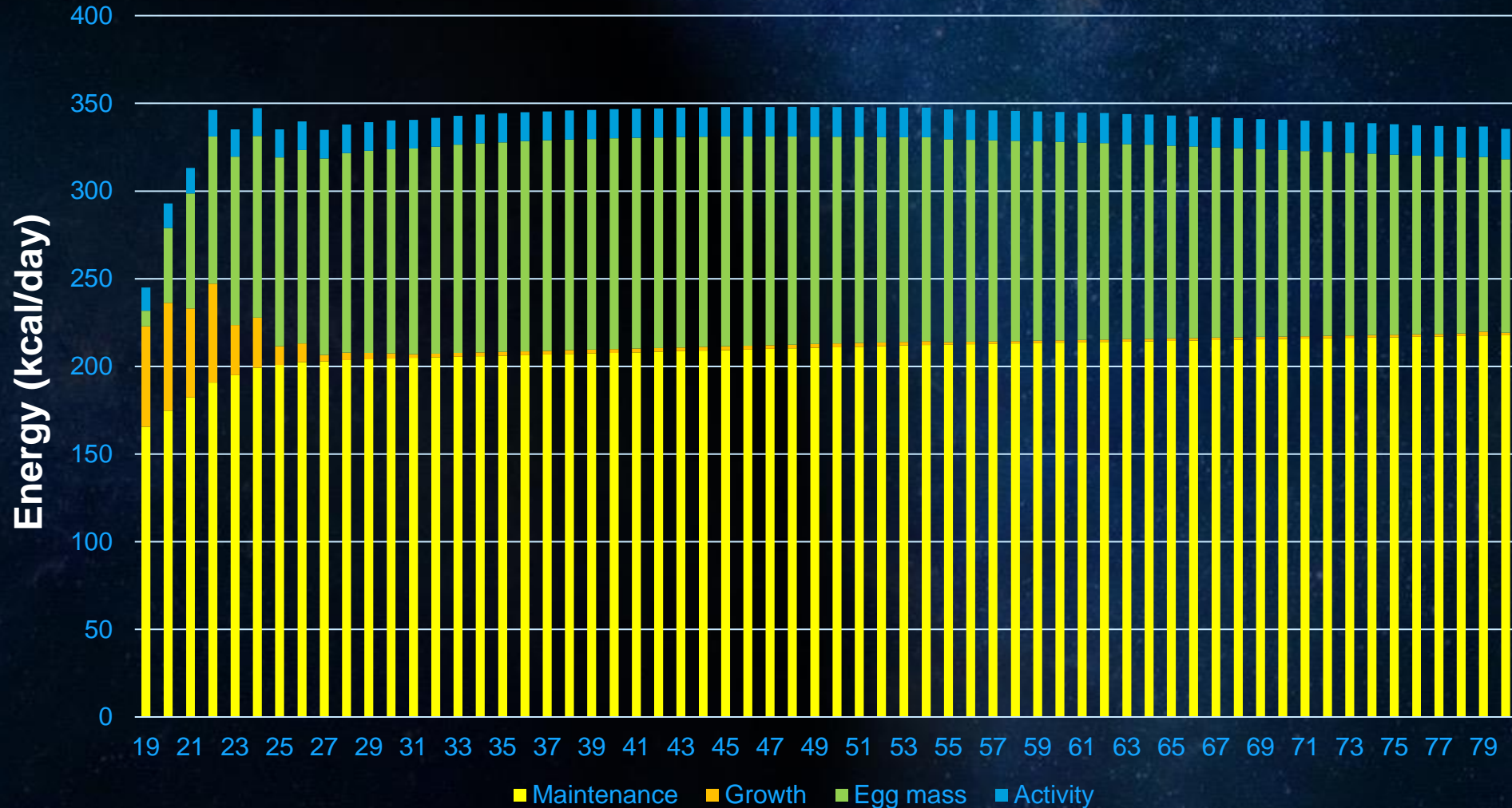


Maintenance requirement vs Activity



ACTIVITY

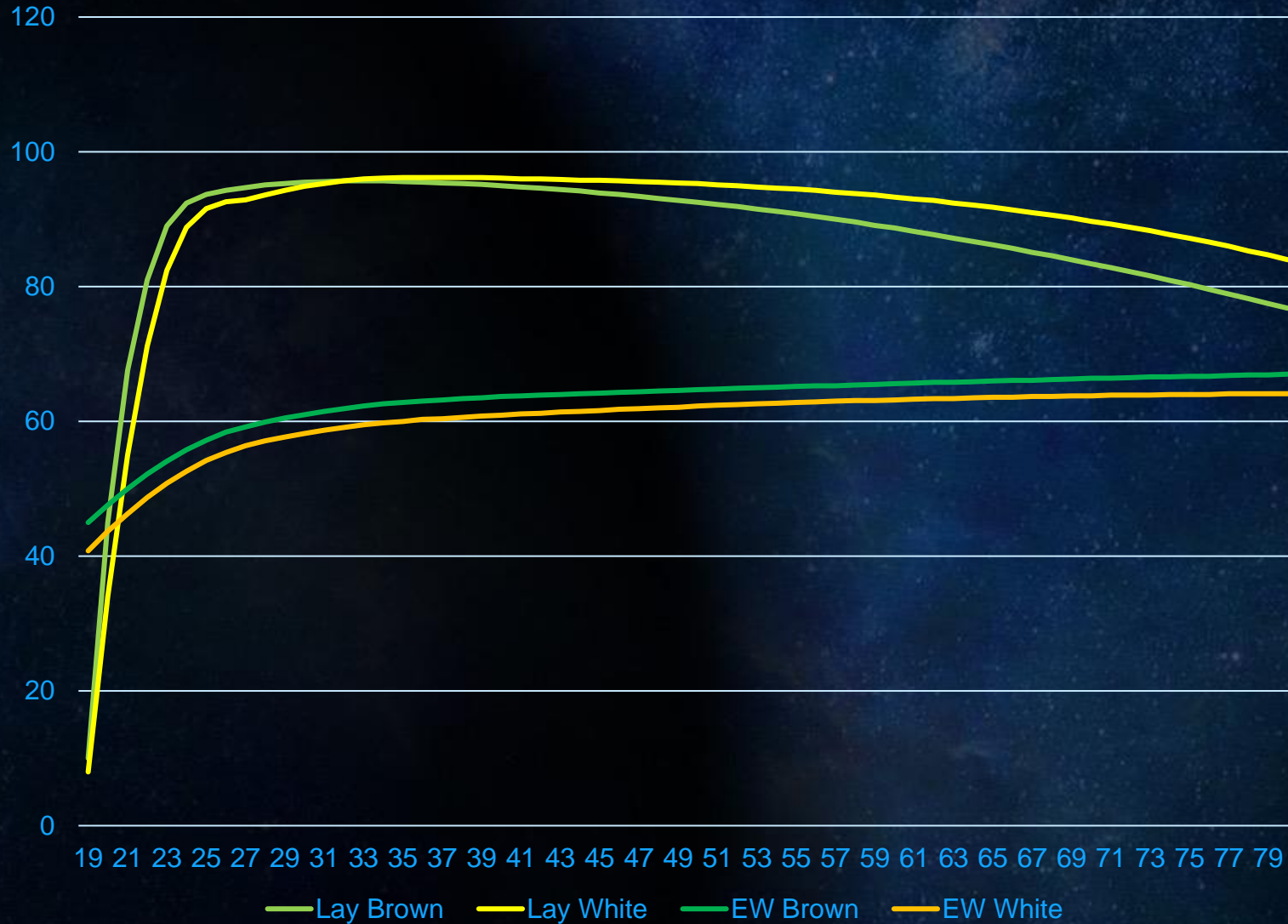
Energy needs



65% energy is for maintenance

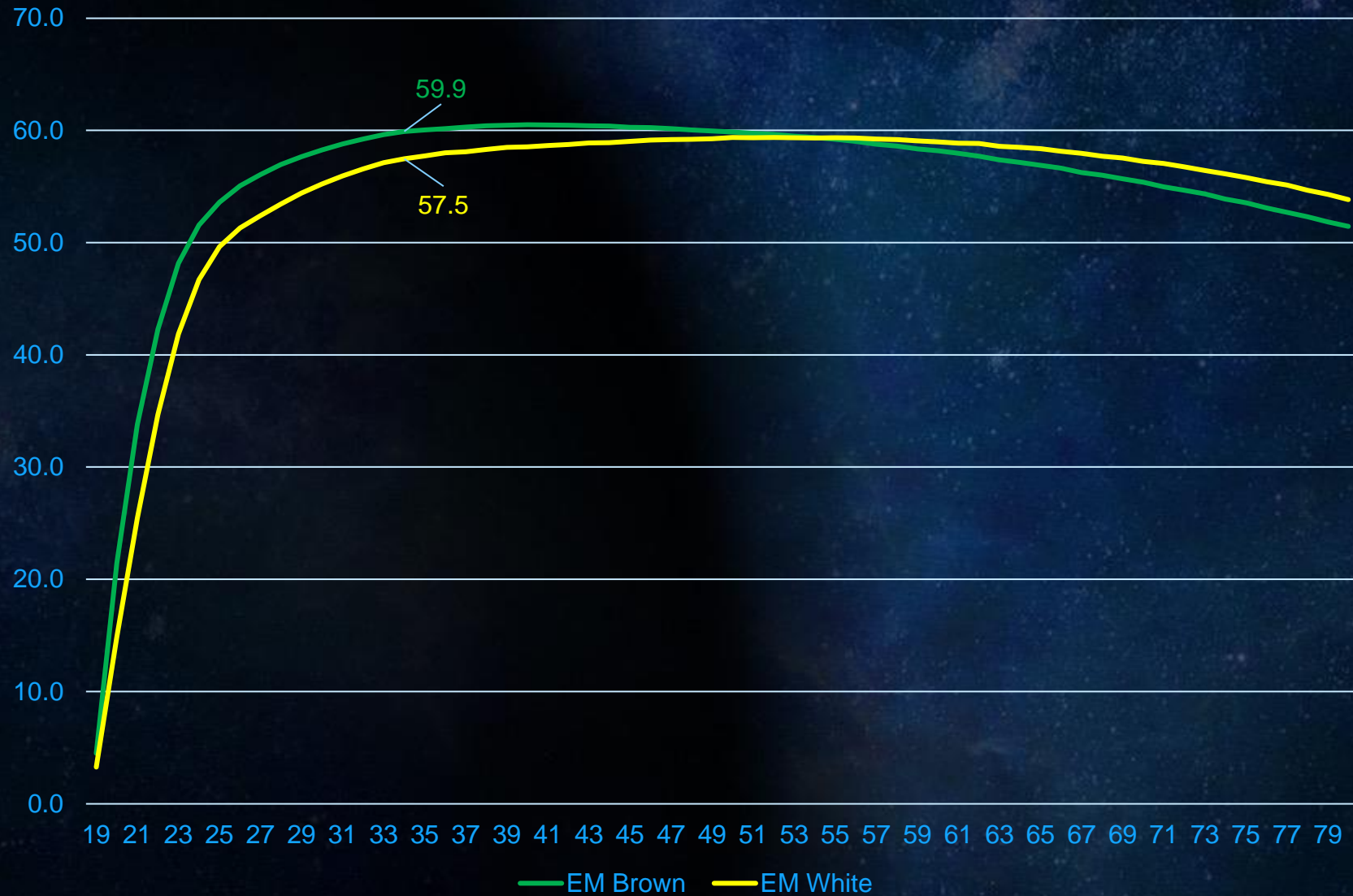
It will reduce the production if we don't compensate the activity needs.

PRODUCTION IN LAYER



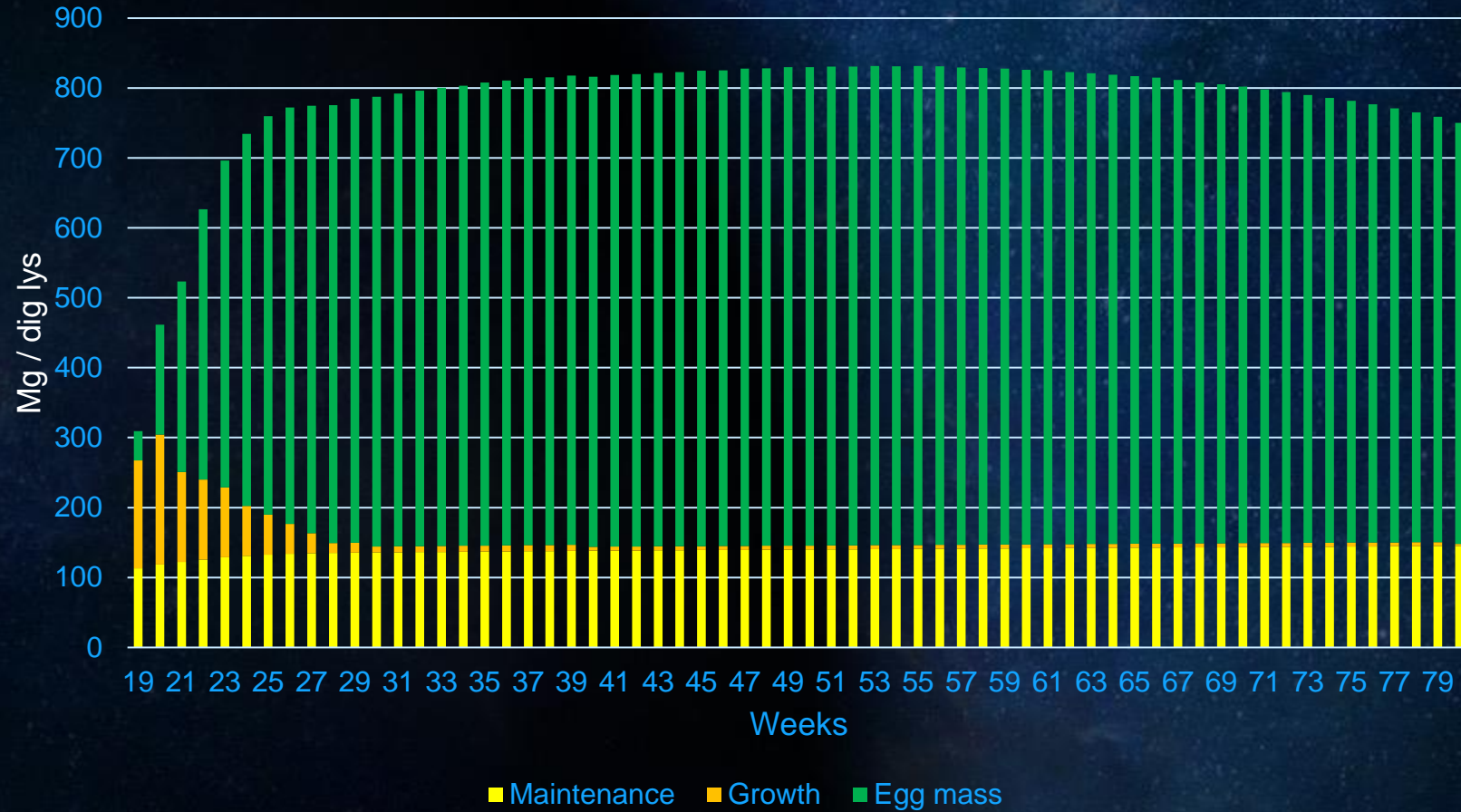
How much is the daily egg mass?

DAILY EGG MASS



The key to the amino acid needs

AMINO ACID NEEDS

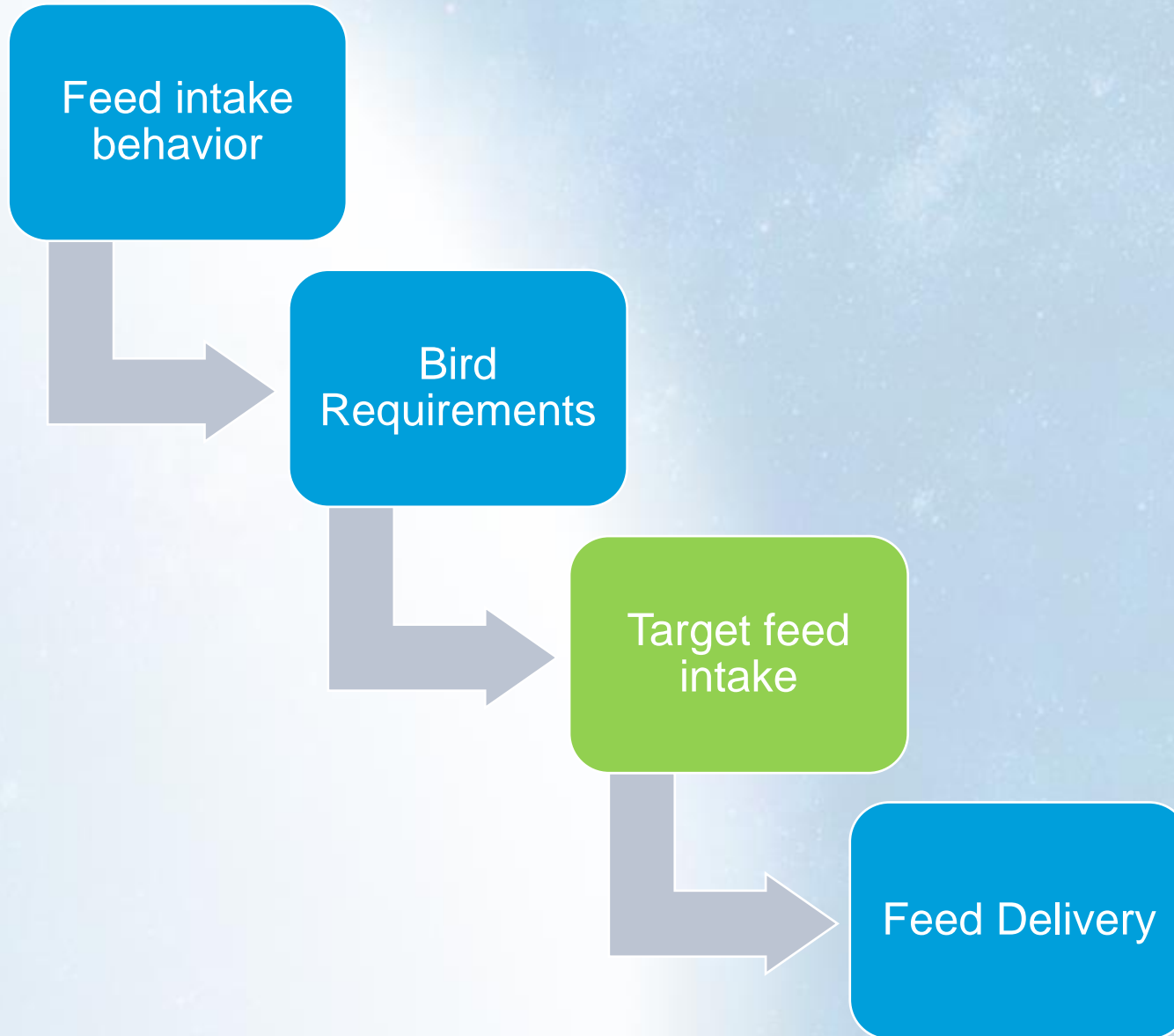


80% is for egg size

Key amino acids in cage free

Prevention

- M+C: need to be sure we have them. Key in oxidative stress:
 - Effects: mortality and feathering
 - Oxidative stress triggers:
 - High metabolic rate / Disease challenge / Hot / cold temperature / Ammonia
- Tryptophan: key amino acid for keeping bird calm.
 - Correlation between level of Trp and Serotonine in poultry
 - Serotonine lack linked to aggressive behavior



OPTION 1

	%
Energy	2840
Dig Lys	0.762
Dig Met	0.381
Dig M+C	0.686
Dig Thr	0.533
Dig Trp	0.168

OPTION 2



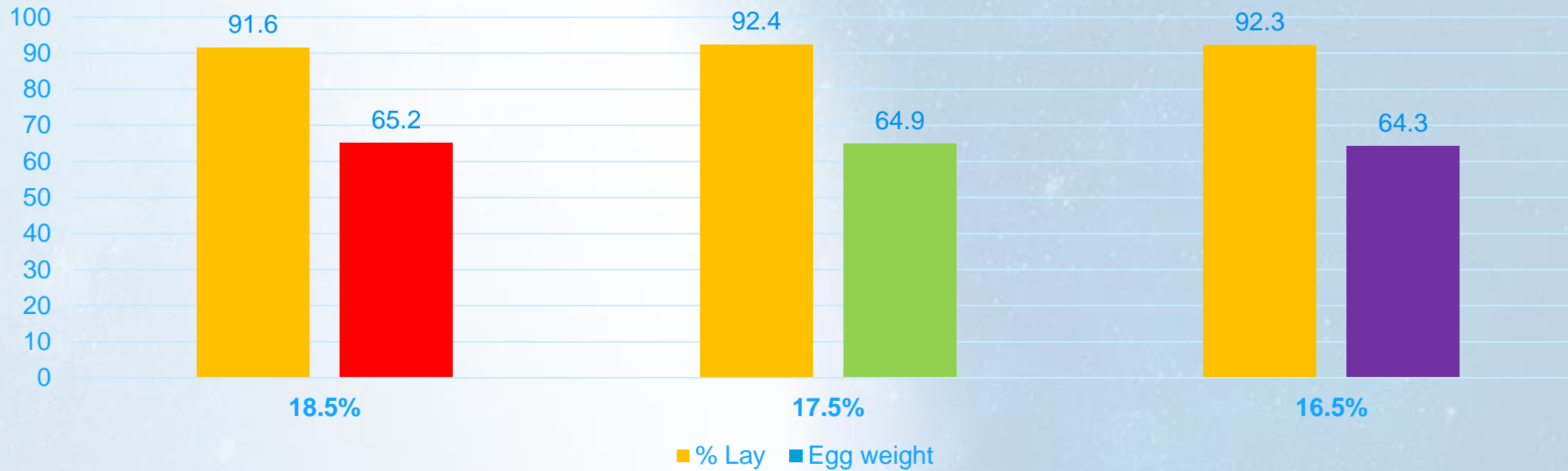
	%
Energy	2710
Dig Lys	0.727
Dig Met	0.364
Dig M+C	0.655
Dig Thr	0.509
Dig Trp	0.16

Corn - Soya 46% - Soya oil - Wheat bran

What are the options?

Feed intake		115	120	125
Men 330 kcal / hen		2870	2750	2640
	mg / hen / day			
Dig Lysine	830	0.722	0.692	0.664
Dig Methionine	415	0.361	0.346	0.332
Dig Met + Cys	747	0.650	0.623	0.597
Dig Threonine	581	0.505	0.484	0.465
Dig Tryptophane	183	0.159	0.152	0.146
Calcium	4	3.5	3.35	3.2
Av Phosphorus	380	0.33	0.316	0.30

Produce the egg size you need



Pullet same size at 17 weeks, same energy feed and all 1.8% fat and production from 22 to 50 weeks

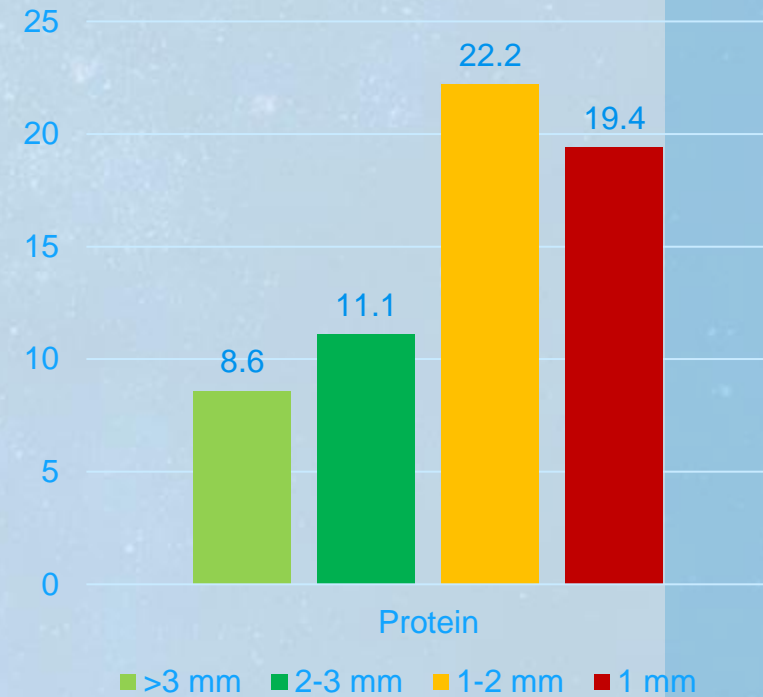
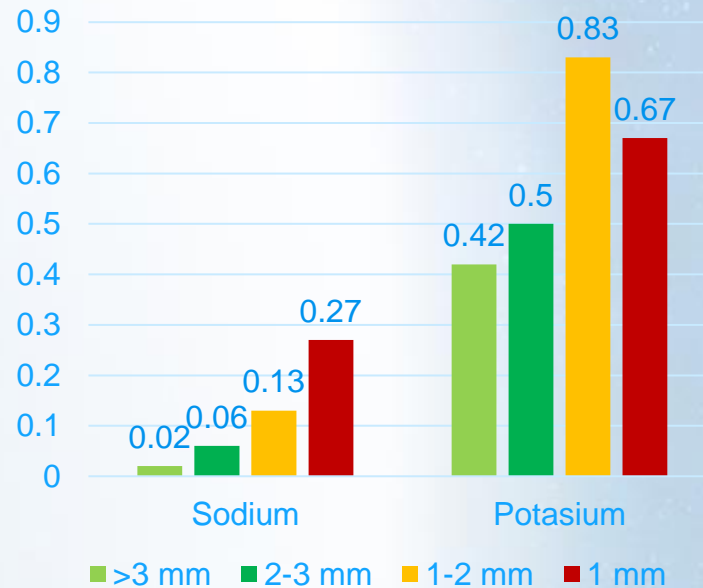
How much fiber is needed?

- Fiber is not an essential nutrient for layers
- Fiber can help in case of nutrient deficiency
- Is it easier to increase the fiber than finding the deficiency?

Fine particles (Sodium)

Is a factor in feather pecking
(0.17-0.18 % Na)

What else is in fine particles?



Feeding program

	Layer 1	Layer 2	Layer 3
Age (weeks)	22-45	46-70	> 70
Feed intake target (gr)	120	120	120
ME (kcal/kg)	2,750	2,750	2,750
Dig Lys	0.692	0.692	0.667
Dig Met	0.346	0.346	0.333
Dig Met+Cys	0.623	0.623	0.600
Dig Thr	0.484	0.484	0.467
Dig Trp	0.152	0.152	0.147
Na	0.15	0.15	0.14
Cl	0.15	0.15	0.14
Ca	3.3	3.5	3.75
Dig P	0.32	0.28	0.25

Is BW changing?

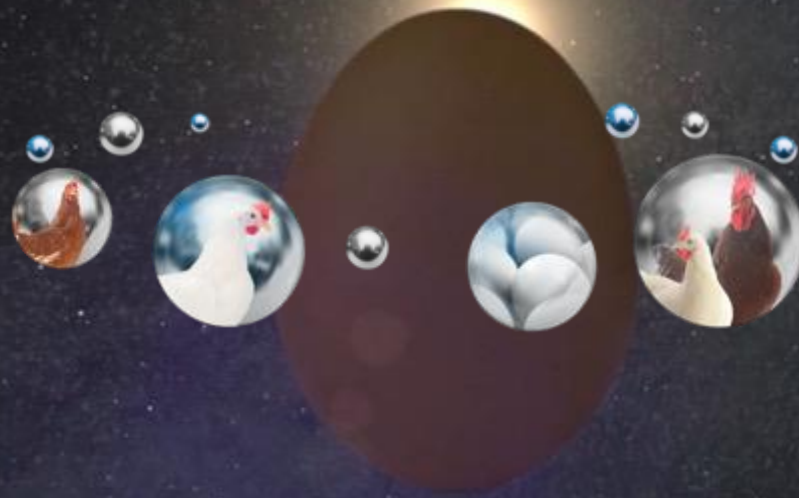
Check the egg mass

Adapt to the market

Summary

- Feed behaviour is even more important in cage free.
- The body weight, egg mass and activity are the factors to define the needs.
- All the layer hen needs a feed intake target.
- Feeding program doesn't change much:
 - Energy depends on BW
 - Amino acids on egg mass
 - Ca and P on age.

Thank you for your attention



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