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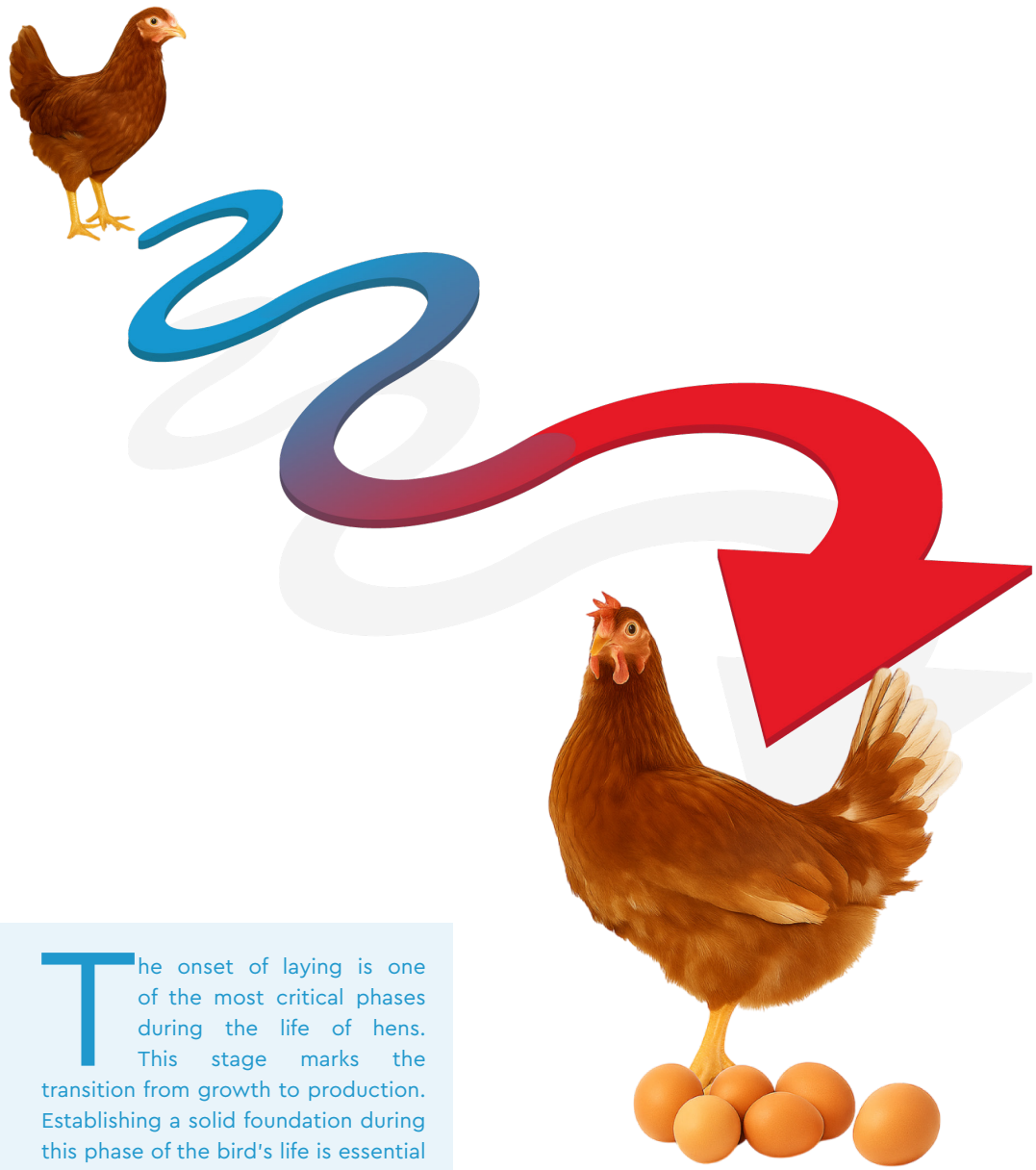
Technical Tip

INTERNATIONAL

The key to your profit

HYBRID FEED: FEED FOR A SMOOTH ONSET EGG PRODUCTION

From rearing to laying

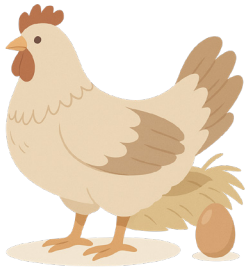


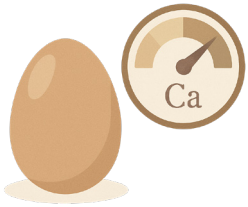
The onset of laying is one of the most critical phases during the life of hens. This stage marks the transition from growth to production. Establishing a solid foundation during this phase of the bird's life is essential to unlock the genetic potential of laying hens and ensure maximum egg production, quality, and longevity.

H&N PENINSULAR

Key factors at onset egg production

Sexual maturity and onset of ovulation. The ovary, previously small and inactive organ during the growth stage, becomes to suffer highly vascularized and functionally active. Proper timing of sexual maturity ensures optimal reproductive performance. Early or delayed onset can affect long-term egg production and egg quality.





Peak medullary bone mineralization, a vital calcium reservoir for eggshell production. The proper development of this specialized bone is essential to maintain eggshell quality, particularly during the later stages of lay. If calcium levels are insufficient, hens will deplete structural bone, increasing the risk of osteoporosis and fractures later in life.

Increase in nutritional demands. Nutrient requirements increase dramatically due to the demand for egg formation, growth, skeletal development, and overall metabolic activity. Inadequate nutrient supply, and/or insufficient feed intake can impair egg production, shell quality, and hen health.

Hybrid Feed

Start of light stimulation to 70% production

Hybrid feed is a strategic feeding approach **designed to support the body development of the pullets and help hens to start the production as well as possible**, suppling the nutrient need for the growth and for starting the laying.

The key nutritional components of the hybrid feed are reported in the **table 1**.

Nutrients	
Energy (kcal/kg)	2,700
Dig. Lys. (%)	0.80
Dig. Met. (%)	0.40
Dig. Met. + Cys. (%)	0.72
Dig. Thr. (%)	0.56
Dig. Trp. (%)	0.18
Dig. Ile. (%)	0.64
Dig. Val. (%)	0.70
Dig. Arg. (%)	0.83
Crude fiber (%)	2.75
Calcium (%)	3.80
Av. Phosphorus (%)	0.47
Salt (%)	0.28
Fat adds (%)	1.60

The selection of the Raw material is very important
(see details further)

***Table 1** - Nutrient recommendation of hybrid feed.*

Key Features of Hybrid feed

Energy

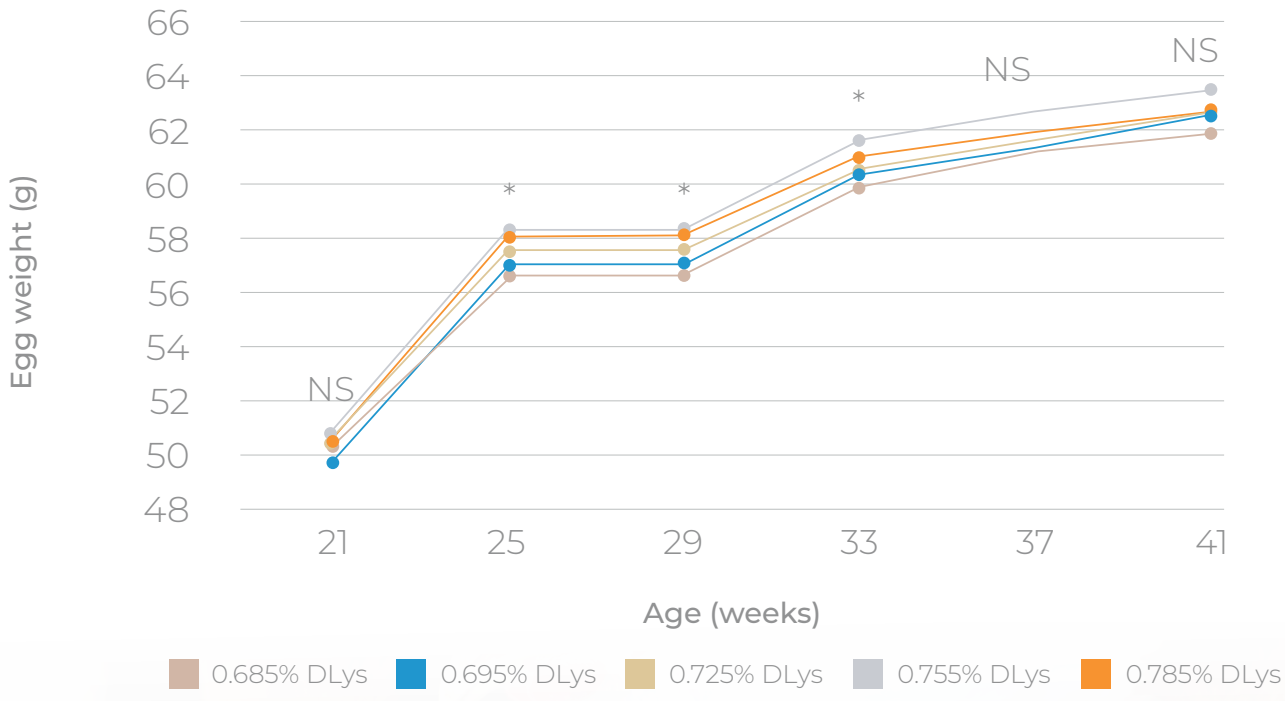
Low

With the objective **to persist the stimulation of the feed consumption** of the hens as long as possible during the weeks of the start of the laying.

Amino acids

High levels

To ensure the **correct growth and development of the organs**, while reproductive tract and liver, the proper **start of production** in terms of performance and egg weight.



***Graphic 1** – Effect of the amino acid on egg weight evolution*

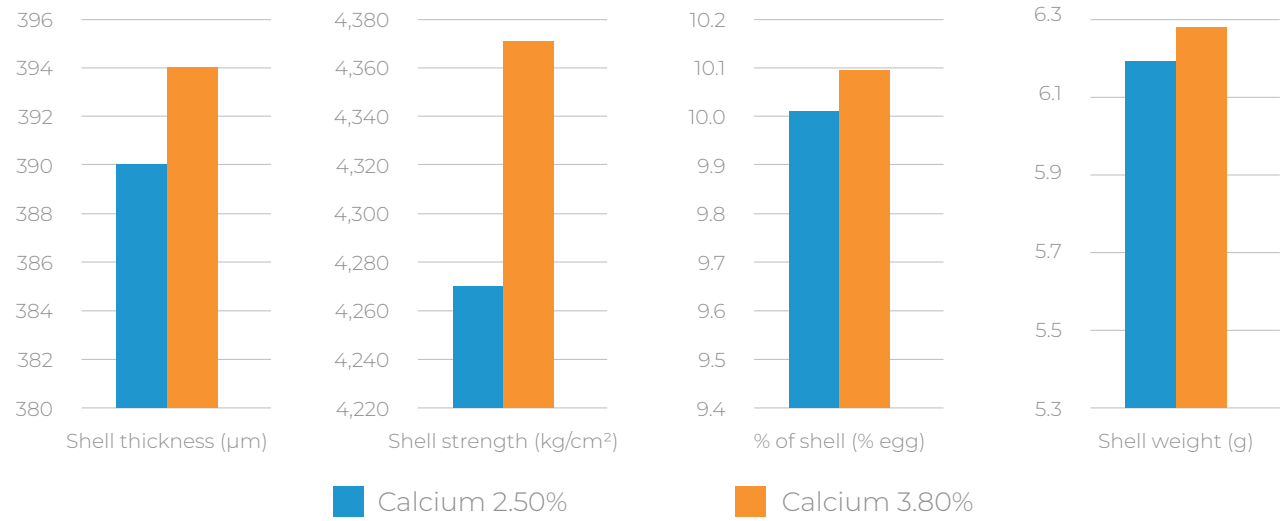
In the recent research, *Scappaticcio et al. (2022)* reported that fed hens during the onset of the egg production, with high levels of AA in the diet (in which DLys was used as AA of reference), they reached 30% egg production and the desirable egg weight sooner than hens fed during the same phase with diet with low AA contents. (**Graphic 1**).

Calcium

High levels and coarse particle as source

At the onset of egg production, it is essential to **provide laying hens with adequate levels of dietary calcium and at least 60% of the calcium carbonate in the diet should be provided in coarse particle form**. Coarse calcium particles ensure a slower release and prolonged availability of calcium.

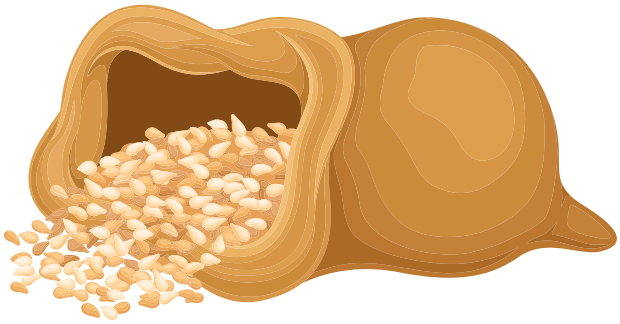
In the recent research, *De Juan et al. (2023)* compared 2 different Ca levels (2.5 and 3.8%) used in the feed from 16 to 19 weeks of age. The results of the experiment demonstrated that providing an adequate calcium level in the diet during the early laying phase, sufficient to support an eggshell formation, had long-lasting benefits in terms of shell quality.(**Graphic 2**)



***Graphic 2** – Effect of the calcium level in the diet used from 16 to 19 weeks of age on eggshell quality of the eggs produced from 19 to 63 weeks of age*

Crude fiber

Fiber inclusion stimulates the growth and function of digestive organs such as the gizzard, proventriculus, and intestines, **enhancing nutrient absorption and overall feed consumption. The crude fiber content supplier in the hybrid diet should match that of the developer phase.**



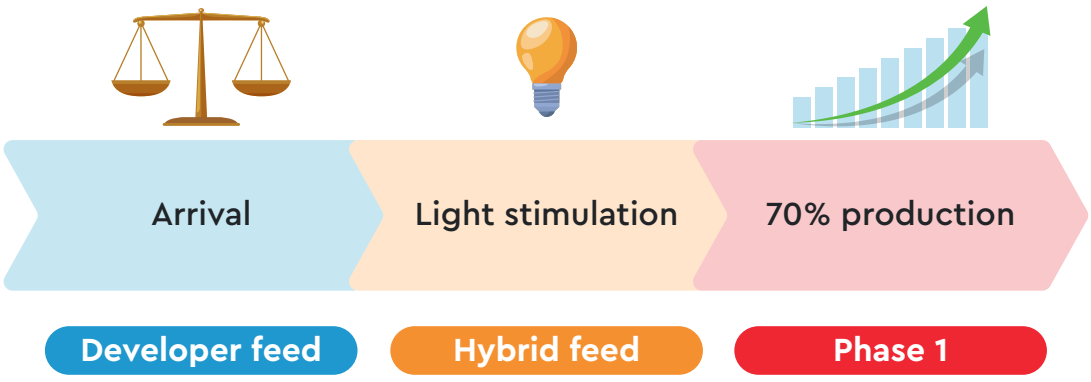
Salt

Sodium chloride (NaCl), commonly known as salt, plays both roles in poultry nutrition: it allows essential physiological requirements and **enhances feed palatability.** It is considered one of the key raw materials **to stimulate feed intake** in birds. **In the hybrid feed formulation, a minimum inclusion of 0.28% of the salt** is recommended to effectively stimulate feed intake.

Adding fats

Incorporating add fats into the feed of laying hens during the early stages of egg production can enhance both egg-laying rates and egg weight. These improvements are attributed to the fact that **fats act as an efficient source of energy and that their addition to feed improves amino acid utilization**, key components for the weight developer egg. For more information about the add fat benefit in the feed see the egg size Technical Tips by H&N International.

How to use hybrid feed?



The onset lay weeks are the most critical phase of the life of the hen. **The implementation of hybrid feed in a conventional nutritional program on the farm is an easy option** based on **4 steps:**

1

Transfer the pullets from rearing to the production house. Follow to fed pullets with a developer feed until to achieve the **correct body weight for light stimulation** (H&N recommendation: 1.250g for commercial Nick Chick, 1.260g for commercial Super Nick and 1.450g for commercial Brown Nick).

2

Once achieved the correct body weight, start the light stimulation and contemporaneously **change the feed supplied from developer to hybrid feed without supplied the pre-lay feed**. H&N International doesn't recommend the use of the pre-lay feed in the nutritional program of the laying hens.

3

Achieving 70% of lay changes the diet from hybrid feed to phase 1 feed.

4

Once the flock reaches 25 weeks of age change the feed in function of the production objective of the market.

The hybrid feed effects

Results from the H&N International R&D farm

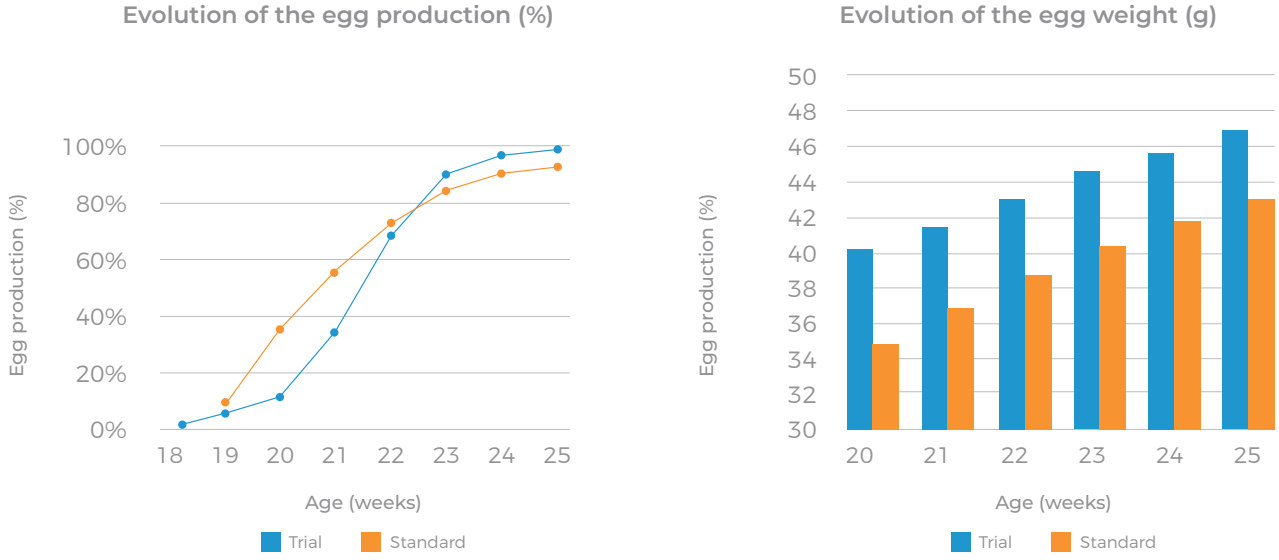
The use of **the hybrid feed** during the onset of the egg production cycle was tested in Nick Chick white egg laying hens from 18 to 25 weeks of age with the objective to study the impact of this new feeding strategy implemented during the onset of the egg lay.

Pullets were allocated in the H&N International R&D farm at 16 weeks of age. Once birds allowed the correct BW recommended by genetic company (1,250g), the light stimulation of the pullets started adding 2h/d the first week, and then 1h/d each week until to achieve 16h/d of the light in the house. From the light stimulation until the flock achieved 70% of egg production, birds were fed with a common diet based on hybrid feed.

The nutritional profile of the diet supplier is reported in **table 1.**

The results of the experiment, such as the evolution of egg production and egg weight during the onset of the lay are reported in **Graphic 3.** The performance obtained with the nutritional program tested were compared with standards performance reported in the management guide of the Nick Chick by H&N International.

The results published showed that applied to the nutritional **program based on hybrid feed, better results than the standard performance**, in terms of egg production and egg weight evolution during the onset of the lay were achieved. Consequently, the implementation of the feed approach based in hybrid feed until 70% of egg lay plus phase 1 until 25 weeks of age of the hens is an interested strategy to adopt during the onset of lay with the objective to ensure a quickly egg weight increase.



***Graphic 3** – Egg production and egg weight evolution*

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