



# NUTRITION NOTES

Innovation + Research from Kent Nutrition Group

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## EGG YOLK COLOR IN HOME FRESH® AND POULTRY LAYER FEED VS. FIVE COMPETITIVE LAYER FEEDS

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At the request of Marketing a few years ago, we incorporated a Marigold Extract in Home Fresh® Layer Feed to create a deeper colored yellow yolk. In 2023, we had another request from Marketing, as “the new trend” with a few competitive companies, was to market layer feeds that contained pigments to create an orange-yellow yolk even though the vast majority of commercial egg yolks are yellow. We initially formulated diets with less Marigold Extract, but with varying levels of a specific source of Paprika (red chili powder) to create the orange-yellow yolk for Home Fresh and tested these test formulas in three local layer flocks in Iowa. Once we determined the formulations we wanted to use based on yolk color, we then constructed test layer pens at the Kent Research Farm. With our economy line of layer feed (Field & Farm Poultry Layer), we did incorporate a level of Marigold Extract to enhance the yellow yolk. We obtained five competitive layer feeds and compared them to the new Home Fresh Extra Egg along with Poultry Layer.

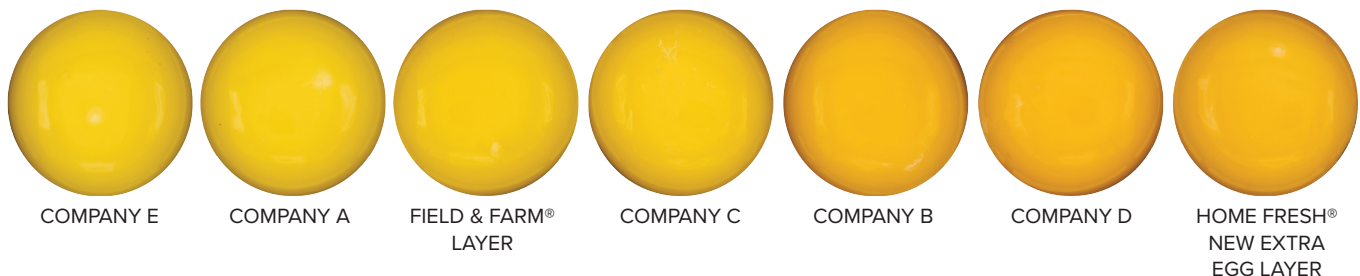
The DSM Yolk Color Fan



**Pros:** Standard, single measurement, inexpensive, and easy to use  
**Cons:** Subjective, variations among individuals

The layer study consisted of 42 Hy-Line Brown pullets (19 weeks old) at which time the seven different layer feeds were fed. We used 6 pullets per pen with egg production reaching production levels after 5 weeks (24 weeks old). At 25 weeks of age, we collected eggs from each pen and measured color scores using the DSM Yolk Color Fan shown above. Seven Kent Corporation employees from three different departments (to obtain a good random average) gave a color score to each set of eggs per pen and averaged the seven to get the final score. As is standard procedure, the individuals scoring yolk color were blinded to the feeds used for each pen until after the scoring was completed.

The yolk colors are shown below. Note that the Home Fresh® Extra Egg has an orange-yellow yolk that is similar to Company B and Company D. In addition, the Field & Farm Poultry Layer is very competitive when compared to the other three companies shown.



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The yolk pictures at right show the differences in color with the New Home Fresh Extra Egg compared to the previous color we had in the egg with the older formula

The pigments that are deposited in the egg are susceptible to lipid peroxidation. In a commercial study in the United States, it was shown that the use of Selisseo as an organic selenium source in layer diets resulted in a higher yolk color score (8.5 vs. 7.5 on the Color Fan) than the layers fed diets containing selenium yeast. This preservation of the carotenoids (pigments) could be the result of an improved antioxidant status when Selisseo is used as an organic selenium source. In addition, added Selisseo helps lower oxidative stress (such as with hot weather) which allows for better absorption and metabolism of the pigments. The bottom line is the New Home Fresh Extra Egg with Selisseo in the formulations will help preserve the orange-yellow yolk color.

**Summary:** Home Fresh Extra Egg now has an orange-yellow yolk color based on the testing conducted at the Kent Research Farm.



HOME FRESH® CURRENT  
EXTRA EGG LAYER

HOME FRESH® NEW  
EXTRA EGG LAYER