Measure Egg Quality in Breeders and Layers with Zinpro® BlueBox™ Technology

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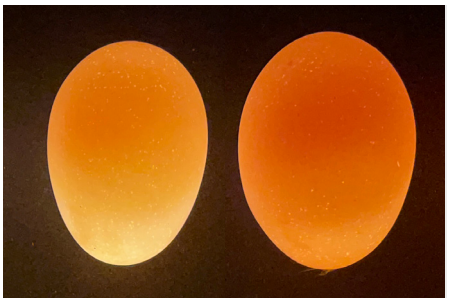
Eggshells, while appearing simple, are a complex structure that can have implications for overall egg quality, whether you are managing flocks of broiler breeders or laying hens for table eggs.

Current methods for measuring eggshell quality, including shell thickness, specific gravity and breaking strength, are inconsistent, time-consuming, sometimes wasteful and not as accurate.

Recognizing the need for a better method to monitor eggshell quality, Zinpro® spent over six years developing the Zinpro BlueBox technology, which observes an often-overlooked parameter associated with eggshell quality: translucency.

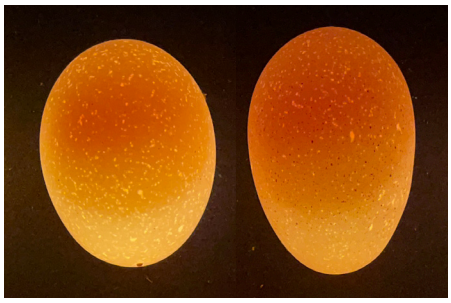
Translucency refers to the degree to which light passes through the eggshell and can be easily measured with Zinpro BlueBox technology without sacrificing eggs. We have developed a three-point scale to score this metric, with a score of 1 meaning the egg has low translucency (opaque) and a score of 3 meaning there are many translucent spots.

Translucency Score 1



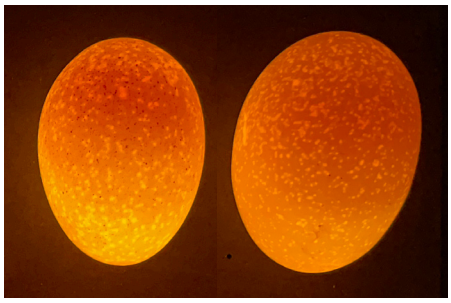
Few to none translucent spots

Translucency Score 2



Several small translucent spots

Translucency Score 3



Many large translucent spots

Translucency Scores Correlate with Egg Quality

The formation of shell membranes influence the structure of the eggshell so that flaws and/or inconsistencies at the membranes result in more translucent shells. High scores are associated with weaker shells, higher incidence of contaminated eggs, reduced hatchability, lower chick quality and higher chick mortality.

For broiler breeders, eggs with translucency score 3 can have a 6.9% reduction in hatchability compared to eggs with translucency score 1, based on research conducted at Auburn University and published in Poultry Science.

For table eggs, translucency is correlated to the number of saleable eggs, egg shelf life and the number of broken/cracked eggs.

Eggshell quality can fluctuate often as eggs are produced daily. An environmental stressor such as hot temperatures or an unfamiliar person in the barn could have a negative impact on shell quality. Farm sanitation and biosecurity can also play a role, as well as hen age and nutritional status.

High-translucency eggs are prone to microbial translocation from the environment into the egg, where they can infect the developing embryo, challenging the chick's health at hatch and possibly infecting other eggs and healthy chicks inside of the incubators.

Evaluating eggshell translucency using Zinpro BlueBox technology helps identify opportunities to address production and nutritional improvement in hens, which leads to higher productivity and stronger returns on investment. For layers, this means stronger, more saleable eggs. For breeders, this means higher hatchability and more healthy, quality chicks.

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Predictive Assessments Help Optimize Egg Production

Compared to egg candling, which occurs when eggs are transferred from the incubators to hatchers at 18-19 days, egg translucency can be measured much earlier. This allows a timely measure of eggshell quality, which can be predictive of hatchability and chick quality at hatch.

If a batch of eggs has high translucency scores, the hatchery can work with the breeder flock and veterinarian teams to identify what factors may have caused the high scores, as well as develop an action plan to improve those scores on future egg batches. For example, if there needs to be a ration change or if there is an issue in the henhouse environment (e.g., stress, health challenges), it can be adjusted. On the other hand, if egg batches have lower translucency scores, they can be incubated together for further optimization of hatchery functions.

Zinpro Improves Eggshell Quality

Zinpro® Performance Minerals® can help improve eggshell quality, as measured by translucency, which in turn, contributes to improvements in hatchability. Commercial field observations evaluating more than 300,000 eggs show that supplementing breeder hen diets with Zinpro Performance Minerals improved translucency scores and hatchability.

Our team is passionate about poultry. When we combine our expertise and experience with the powerful insights of Zinpro BlueBox innovation, we can help your flock reach its ultimate potential.

To learn more or schedule a demonstration,
connect with a team member or visit **zinpro.com**

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