COMMERCIAL EGG TIP...

SHELL QUALITY WITHOUT OYSTER SHELL

For many decades, oyster shell has been a popular calcium source for laying hens. The ingredient has been reported in many scientific studies to be associated with an improvement in eggshell quality. As laying flocks age and egg size becomes larger (with more surface area to coat with shell), eggshell quality tends to decrease. This leads to an increase in the number of cracked or broken eggs, with obvious financial consequences. As poultry producers recognized the positive influence of oyster shell on eggshell quality, this ingredient was routinely incorporated into many layer feeds for most of this century. However, last year's closing of a major oyster shell supplier has made many poultry producers question whether it might be possible to satisfactorily substitute large particle size limestone for oyster shell and still maintain the same degree of shell quality.

In theory, this substitution should prove satisfactory. The generally accepted reason for the positive effect of oyster shell on eggshell quality is its large particle size. Because these large particles dissolve slowly in the digestive tract, calcium is made available to the bird during the evening and night time hours when the shell is deposited. By contrast, finely ground limestone is rapidly dissolved and utilized in only a few hours.

Several studies conducted in the laboratory of Dr. David A. Roland, Sr. at Auburn University were recently published in Feedstuffs. The studies addressed the specific point alluded to above: whether large particle size limestone (pullet-size) might give the same improvement in eggshell quality as that previously observed for oyster shell. The Auburn studies, in fact, confirmed that the size of the calcium source rather than the source itself (limestone versus oyster shell) was responsible for the improvement in shell quality.

As pointed out by Dr. Roland, many studies over the past 40 years have addressed the same
question. Several of these studies found oyster shell to have greater value than limestone for improving eggshell quality. However, as Dr. Roland indicates, in many of these studies oyster shell was compared with "ground" rather than "large particle" limestone. Thus, the comparisons were not meaningful.

The results of Dr. Roland's studies, especially when taken into the context of previous published reports, clearly indicate that large particle limestone can satisfactorily substitute for oyster shell in laying hen diets. There is no reason, however, to completely remove fine particle limestone from the diet. Instead, Dr. Roland's studies show that a 50% replacement of ground limestone by large size limestone is quite adequate to optimize eggshell quality.

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Reference:

**Consult with your poultry company representative before making any changes.**

"Your local County Extension Agent is a source of more information on this subject."