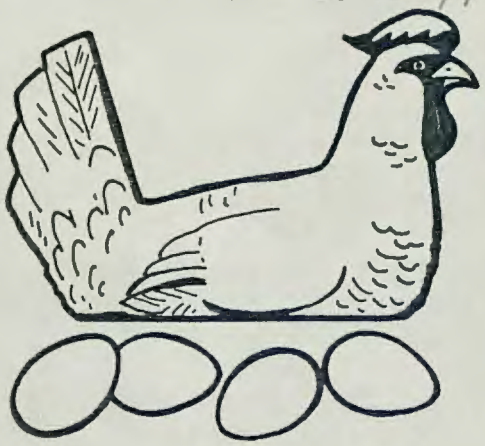

Poultry Patter

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REFINEMENTS IN LAYER NUTRITION

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If you remember when hens were fed primarily on table scraps and grain, you automatically qualify as an "old timer." In the early days of this century nutritional knowledge was far from complete, and it was the rare farmer who could produce table eggs during fall and winter months.

Since the discovery in the 1920's that adding cod liver oil to the hen's diet made possible year-round egg production, there has been much progress in poultry nutrition. The "big five" feeding formula composed of 100 pounds each of ground corn, oats, wheat bran, middlings, and meat scraps has been replaced by a more complex one which recognizes the importance of vitamins, minerals, and protein quality.

Part of today's research is aimed at refining present formulations to achieve higher production efficiency and greater consumer acceptability.

Refinements in Efficiency

For many years, the farmer evaluated a feed on the basis of its cost per pound. Now, in addition to satisfactory performance, he also expects the feed to produce eggs efficiently. In other words, he also is interested in cost per egg. This has brought about use of high energy diets. In our area this means that the diet is probably a corn-soybean meal type and contains little or none of the lower energy grains and by-products. Sometimes fat is added to raise diet energy.

The energy requirement of a hen is greater in cold than in warm weather. She eats more feed during cold months to acquire added energy. In order not to tax her ability to eat enough during the cold months, the diet should be a high-energy type.

During warm weather the energy requirements is decreased and therefore feed consumption also decreases. Reduced feed consumption also occurs during periods of stress or disease. During such periods levels of protein, vitamins, and minerals should be increased.

This is the basis for statements from southern states that the protein requirement of hens is approximately 18 percent of the diet. This is also why calcium levels should be increased in complete feeds during hot months.

As nutritional requirements become defined more completely, greater emphasis will be placed on feeding for specific environmental and production conditions. This may not be convenient where feeds are prepared for general farm flock use; however, in larger operations it will be relatively simple to alter formulas based on these considerations.

Quality of Product

In feeding hens, we want to produce eggs acceptable by the consumer. Yolk color is controlled by feeding; recent research reports indicate that yolks of

deep coloration for the egg breaking industry can be produced by feeding diets with high levels of alfalfa meal. In these cases a minimum of 10 percent good quality alfalfa meal or corn gluten meal was needed to produce optimum yolk color.

Egg shell quality is highly influenced by nutrition. However, there are still areas of deficiency that nutrition has been unable to counteract in a predictable manner. For example, it would be simple to produce poor egg shell quality by inducing a deficiency of calcium or vitamin D; however, all cases of poor shell quality cannot be corrected by adding these particular nutrients.

There has been public interest in the fat and cholesterol content of eggs. It has been difficult to make changes in cholesterol level in eggs; however, it is relatively easy to alter the types of fatty acids deposited in the egg yolk. By feeding large amounts of unsaturated fats, one can greatly increase the unsaturated fatty acid content of eggs. This has apparently not been done commercially to produce special unsaturated eggs. Actually, there is probably little need to do so since the fat in eggs is already of a "healthful" type.

Vitamin content of eggs can be increased dramatically by feeding more vitamins. Occasionally, eggs of this type have been produced in an effort to command a market premium. However, this practice is not general, because eggs are already high in essential vitamins. Further, it is inefficient to add vitamins in this manner.

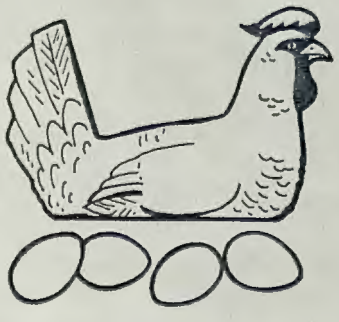
There is no evidence indicating that protein quality of eggs can be altered by nutrition. Here the hen apparently draws the line and decides that if the protein in her diet is not of sufficient quality she will produce a smaller egg or will not produce at all.

FORMULA CHART AVAILABLE

A poultry feed formula chart is now available from your Poultry Extension Specialist, Institute of Agriculture, St. Paul, Minnesota 55101. This chart includes formulas for starter, grower, laying, and breeder rations.

STATE FAIR

Over 120,000 people visited the Minnesota PENB egg exhibit at the fair. It featured egg quality buying on size and an egg drink. A home economist and a member of the State Department of Agriculture were present to answer questions.



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