


Penn State

Poultry Pointers



Agricultural & Biological Engineering Agricultural Economics

AN EGG A DAY?
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Beginning with the first epidemiological study suggesting a link between serum cholesterol and heart disease, the per capita consumption of eggs has been on a downhill slide. The implications for the poultry industry are obvious.

The issue of the relationship between cholesterol and heart disease is a very controversial and emotional issue. There are really two issues: (1) what is the relationship between diet and serum cholesterol? (2) What is the relationship between serum cholesterol and heart disease?

Frankly, it is possible to find a research report or clinical study to support any stance that one wants to take on these issues. However, the fact of life is that many national

health organizations are recommending that the American public reduce cholesterol consumption.

The poultry industry has gone through several strategies in dealing with this issue. Originally there was a lot of denial and criticism of the epidemiological and research data. This was perceived by many as a protection of self-interests rather than an objective approach to the situation. A second approach has been to emphasize the important positive nutritional attributes of eggs — facts that are still valid today.

When it became clear that the recommendations for reduced cholesterol consumption were here to stay, other approaches had to be utilized. The marketing of egg products with reduced amounts of cholesterol has been one approach. Several of these are in use today.

Another approach was to try to alter the amount of cholesterol that a hen deposits in an egg. In general, this has been unsuccessful. The

cholesterol content of the egg is basically resistant to change. There is a likely explanation for this observation. Cholesterol is an important constituent of body tissues and is a precursor for steroid hormones and vitamin D. The chicken does not develop the ability to synthesize cholesterol until 10-14 days of age. Thus, the cholesterol in the egg is needed by the developing embryo since it lacks the ability to synthesize cholesterol. Removal of cholesterol from the egg may interfere with perpetuation of the species.

The latest approach has been the marketing of "modified eggs." We have recently received a number of inquiries about these eggs. I have tried to gather as much information as possible so that I can provide answers to some of the questions that have arisen. The "modified eggs" are obtained from hens fed a proprietary feed. The eggs have a higher vitamin E and iodine content and some modest changes in fat composition. The "modified eggs," which contain the normal amount of cholesterol (213 milligrams), were used in a clinical trial by the Medical College of Pennsylvania. In this trial, 100 volunteers who had high amounts of serum cholesterol (238 milligrams/100 milliliters of serum) agreed to change to a diet recommended by the National Cholesterol Education Program (NEP). One half of the volunteers received the NCEP diet while one

half the volunteers consumed the NCEP diet plus 12 "modified eggs" per week.

Both groups experienced a 7 percent decline in serum cholesterol during the 3-week test period. This led to the conclusion that individuals could consume 12 "modified eggs" per week without raising their serum cholesterol.

However, there was a serious flaw in this experiment. There should have been a third group consuming regular eggs. This would have established whether or not the "modified eggs" had any special value with respect to serum cholesterol.

Unfortunately, the question remains to be answered.

Nutrient Management Protects Water Supply

LEESPORT (Berks Co.) — Nutrient management on the farm has become necessary to protect our water supply. The main nutrient to be concerned about is nitrogen, which is found in manure.

Too much nitrogen can affect the health of children and also the health of farm animals. Too many nutrients in our waterways will cause problems with plant and aquatic life which exists there.

Benefits from a nutrient management plan (NMP) include reducing nutrient pollution to surface and ground water, and better crop utilization.

Farmers can protect the environment by applying manure and other fertilizers in quantities necessary to grow crops. Other factors to take into consideration are time of application, incorporation, and erosion control. These are ways of getting nutrients there, in such a manner that they stay where applied. Erosion is controll-

ed by waterways, terraces, diversions, contourstrips, cover crops, buffer strips along creeks, and residue management.

Another important factor of a successful nutrient management plan would be enough land to receive manure for the number of animals on a given farm. Pending legislation in Harrisburg would require farmers with more than two animal equivalent units (AEU) per acre of crop land to have a nutrient management plan. It is also advisable for farmers with less AEU.

Help on working up a nutrient management plan that would save farmers money by utilizing nutrients from animal manure generated on the farm, can be received by calling your conservation district. For Tulpehocken and Manatawny Watershed farmers in Berks County, and Tulpehocken Watershed farmers in Lebanon County, contact Gerald Batz at the Berks County Conservation District at (215) 372-4657.

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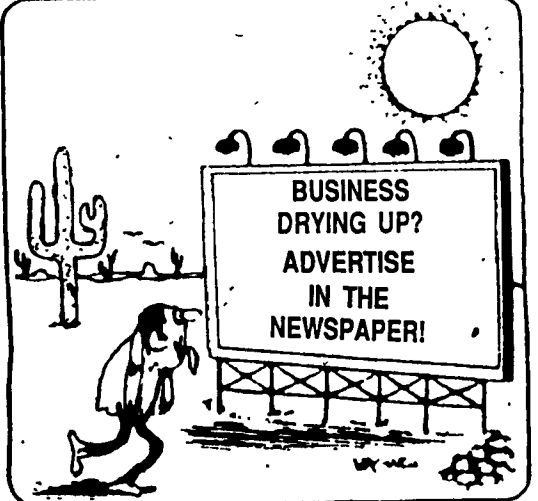
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