

# Egg substitutes found 'lacking'

By TRICIA BRUNHART  
Egg substitutes lack many important qualities found in whole eggs, a Texas A&M University researcher said recently.

Dr. Frederick A. Gardner, an associate professor of poultry science at Texas A&M, conducted a study comparing the whole egg to three kinds of egg substitutes. He found that these products lacked many flavor and textural aspects of a whole egg.

Egg substitutes are generally composed of 85 to 90 percent egg white, said Gardner. With the remainder consisting of corn oil, flavoring, coloring material, vegetable gums, and milk solids. Corn oil adds texture, milk solids add protein, and vegetable gums add thickness to the product. Coloring material and emulsifier are both added to replace the yolk.

All natural cholesterol is in the yolk, Gardner said, and egg substitutes were developed to meet a demand for an egg-like product which was low in cholesterol. The substitutes were intended for people advised by a doctor to reduce their intake of cholesterol, he added.

Three types of substitutes were used in the research, said Gardner. First there were the frozen substitutes, which can be thawed and used like a whole egg. Second were the liquid products, which must be refrigerated. Third, they tested the dehydrated products, to which one

adds water and which contain 20 percent of the natural yolk. Thus there is some cholesterol in the dehydrated substitutes, but none in the frozen and liquid types because they do not contain any yolk, he said.

The experiment involved preparing foods with egg substitutes and presenting them to judging panels. The panels test the foods for flavor, texture, color, tenderness, moistness and overall acceptability.

Scrambled eggs prepared with the substitutes were tested and found lacking in the natural flavor

present in whole eggs. "Flavor is a hard thing to replace," Gardner said.

Cakes were made and their volume compared favorably with whole egg cakes, yet the texture was inadequate. The whole egg has a much more delicate structure than the substitutes, Gardner said. Therefore the texture in whole egg cakes is much better.

Custards were prepared and measured for their thickness and firmness. The vegetable gums added to the egg substitutes to provide

thickness resulted in firmer custards, but ruined the texture, he said.


The panels found there was not much difference among the types of substitutes, except that one had less flavor than the others, Gardner said.

Most of the egg substitutes on the market are really imitations, not substitutes, said Gardner. A substitute must have the same nutritional value as the real product. If it has less, it is considered an imitation.

The remainder of Gardner's research on egg substitutes is being

conducted through surveys. At the Texas State Fair in Dallas last October, one question on a survey asked if people had tried egg substitutes and, if they had, were they satisfied? The results so far, said Gardner, indicate that very few people have tried the egg substitutes and of those who have, most were dissatisfied.

Of the total surveys Gardner has conducted so far, about one percent of the people who have tried egg substitutes are satisfied with them, he said.

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