

Soybean Protein - Food of the Future?

The Greeks Had A Word For It: Protein

The Greek word "protein," which means "first or primary," is an "in" word today. It's important to all of us because protein is part of every cell in our bodies. And, as with calcium, protein must be ingested daily because it can't be stored in the body.

Like school, there are all grades of protein. But high quality protein comes only from animal sources and contains amino acids which can't be manufactured or synthesized in a test tube. Meats, dairy products, poultry and fish are basic sources of this high quality protein.

In our editorial opinion, protein is a thin sounding word and should be colored blue. High protein diets are more than a fad in the United States today, they're a way-of-eating life. But how can we maintain our proper protein level in the current inflationary period with the threat of "protein shortage" resounding around the world?

The best way is to rely on the Basic 4 Food Group to supply protein necessary for your family's health. Use bread crumbs and wheat germ to stretch ground meats into meat loaf, cottage and mozzarella cheese can supply the missing protein if you put less meat in the lasagna. Cheese can extend your food budget by replacing ounce for ounce some of the meat you're not eating.

Cheese and tomatoes will fill in for the missing meat in a spaghetti sauce. Milk and eggs can put protein power back into your French-toasted, low-on-meat sandwich. Or extend servings by adding peas, mushrooms, pimiento and white or cheese sauce to chicken-a-la-king or a tuna casserole.

Another tasty way to get your daily protein is to drink it. Two-thirds of a glass of milk provides the same amount of protein as an ounce of meat, poultry or fish. If you prefer, you can add milk, the natural food, with no trimming, peeling or waste, to cereals, canned soups or main dishes.

With pennies buying less, it makes good sense to shop comparatively for protein the same way you do for any other product. When you do, you'll find that with the exception of vinegar, milk is the lowest priced consumable liquid food of the 8,000 products found in your supermarket. Remember, the cast and players of the Basic 4 Food Scenario are the same. Only the protein roles have been changed to protect your food budget. The last word, Greek or otherwise, is protein.

The soybean—a poor but deserving immigrant from Asia—has hit it big in the New World.

The origins of the soybean are oriental, and more than 4,000 years ago it was one of the five sacred grains of China. But until recently, many U.S. farmers considered the soybean little more than a cover crop, to be planted and then plowed under to restore the soil.

In the last 10 years, things have changed. Today the soybean has achieved real status—everyone in the world seems to want soybeans, and if you were fortunate enough to have 2,000 bushels of them last June, you would have grossed \$24,000.

Harvested acreage in the United States has more than doubled since 1960, and the soybean is now the farmer's leading cash crop.

Feed into food. The reason for this meteoric rise to fame of the humble soybean is basic. The expansion of flocks and herds of sheep and cattle throughout the world in recent years has been great. The need for high protein animal feed—for which soybeans are a prime source—has risen accordingly. As worldwide demand for animal protein grows, a continuing strain will be placed on the resources necessary to produce this essential nutrient.

One offshoot has been closer scrutiny of the soybean as more than just an animal feed. Researchers are finding that the protein-packed bean has much to recommend it as a human food in its own right.

Economists at USDA's Economic Research Service (ERS) now estimate that about 85 percent of all soybean meal used domestically is fed to livestock. Most of the rest is either exported or used for industrial purposes, with less than 1 percent going into human food. The utilization of the beans we export is not too different: Almost all the meal is still used for animal feed.

However, predictions are that more and more meal will be used in food products. In fact, food specialists point to soy protein-based foods as one of the most promising areas of nutritional research.

Protein packed. Soybeans contain about 38 percent crude protein, contrasted with 18 percent in beef or fish. They have three times as much protein as eggs or whole wheat flour and 11 times as much as whole fresh milk. The dry bean contains about 80 percent meal and 22 percent oil, with a high percent of unsaturated fatty acids.

Despite its impressive nutritional value, however, it wasn't until the mid-1960's that serious consideration was given to the soybean as food. Thanks to recent research, soybean derivatives are now made into a large number of attractive food items. Soybean products can be added to meats to extend them, or can be made into meat substitutes called analogs. They can also be made to resemble a wide variety of other foods, from diced, dehydrated bell peppers to mayonnaise to nut-like snacks.

From soybean to steak. How does a soybean become a steak look-alike?

First, the soybeans are ground into a flour that is about 50 percent protein. Further processing filters out hard-to-digest carbohydrates and produces soy isolate, a powder that is more than 90 percent protein.

This isolate is mixed with an alkaline liquid to form a solution which is fed under pressure to "spinning" machines in a process similar to the method used to spin rayon and nylon.

The solution is forced through a die containing some 15,000 tiny holes, each about four-thousandths of an inch in diameter. The jets, as they are pushed through the die, stream into an acid solution that congeals them into separate, pale gold threads of protein: tasteless, odorless, closely resembling taffy in texture, and high in protein.

(Continued On Page 21)

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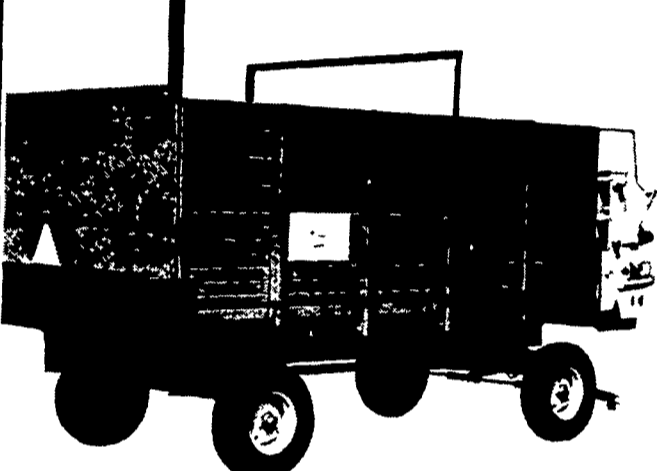
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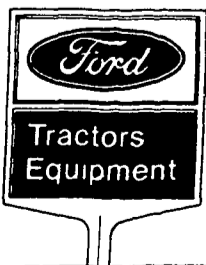
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