

Oil is also **naturally refined**. This means that no chemicals have been used in the processing and that the oil was filtered through diatanaceous earth or otherwise treated to remove the sediment. Naturally refined oils have a some taste and odor.

**Unrefined oil** tastes and smells strongly of the seed from which it is made. Seeds have been heated to 200° F and auger pressed. The oil is then bottled and sold. Raw means unheated and only olive or sesame oil can be raw. Hydraulic presses are used to squeeze the oil without heating it. The label "virgin" or "first press" means the processing of the olive oil end here.

Unrefined olive oil is green and tastes like olives, sesame oil is dark yellow and peanut oil dark brown. Soybean oil is so dark that it can only be used in baking where its strong odor and taste won't interfere too much with the finished product. Safflower oil has a lighter flavor which makes it an all-purpose oil. Corn oil tastes like popcorn and it not very good for salads.



**Part V Diet for a small planet**

In her book, **Diet for a Small Planet** Frances Lappé said that North Americans eat high on the food chain. We eat a lot of animal protein which in turn has eaten vegetable protein. This is expensive both in dollar terms and in world food terms. Lappé proposed that North Americans eat lower on the food chain but suggested that care be taken to substitute other foods in proper quantities and combination to ensure that enough protein was eaten from sources other than animal source.

Protein is vital to a diet because it alone contains nitrogen, sulfur and phosphorous-substances which are essential to life. Protein provides the framework for animals such as skin, nails and muscles. Children need it for growth and adults need it to replace old tissues and build constantly growing tissues like hair and nails. People are 18-20% protein by weight!

Protein is essential for metabolism. It contains enzymes, & hormones used in metabolic reactions. The important molecule which carries oxygen, hemoglobin, is also a protein.

Lappé studied the diets of people in other countries who do eat low on the chain and noticed that certain combinations of foods kept recurring. Corn and beans and rice and beans were two of the constants. In Lebanon, chick peas and sesame seeds are often eaten together. While studying these combinations, and the way protein is used in the body, she concluded that the amino acids of these combinations were complimentary. In other words, the combined foods together furnished the body with the eight amino acids it can't produce itself. The body produces 14 amino acids by itself; the remaining eight must be taken in through protein foods.

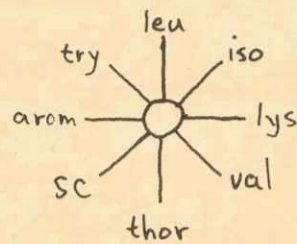
The only foods containing **all** eight of the amino acids are animal proteins such as meat, fish and dairy products along with soybeans and tofu (soybean curds). All other foods have only a partial number of these amino acids. So, if a person is planning to eat lower on the food chain, or a vegetarian diet, he will have to be careful to combine complementary foods so that his diet provides enough usable protein.

Lappé named the eight amino acids that our body can't produce: tryptophan, leucine, isoleucine, lysine, valine, threonine, the sulfur-containing amino acids and the aromatic amino acids. Not only does our body need each of the EAA's eight amino acids, but it needs them simultaneously to carry out protein synthesis. If one amino acid is missing, even temporarily, protein synthesis will fall to a very low level or stop altogether. We also need the individual eight amino acids in differing proportions to be effective.

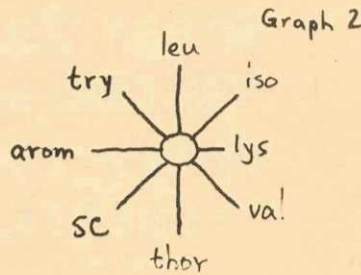
For instance, if seven of the EAA's are 100% present but the eighth in only 50% present, then you might as well have eaten only 50% of the other seven EAA's. The remainder are wasted. It appears that protein "assembly centre" in the cell uses the EAA's at the level of the lowest amino acid present. This is known as the "limiting amino acid."

Lappé refers to NPU-Net Protein Utilization. This is a measure of the protein we eat and how much of it is actually available to our bodies. The amino acid pattern of cheese eaten alone makes it high in NPU because the EAA's are present in proportionally effective quantities.

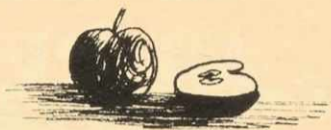
Here is a graph of a perfect EAA pattern. The EAA pattern of an egg is closet to this pattern.



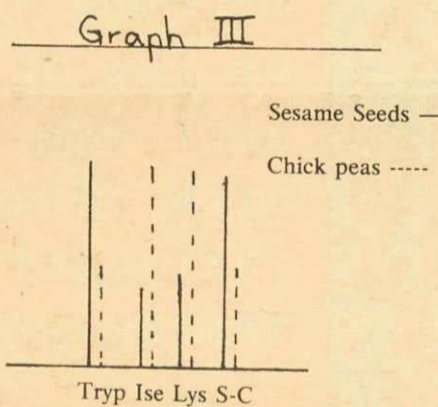
If a protein food is low in one or more EAA's such as lysine. (See Graph II) the usable protein is greatly decreased and looks like this:



Lysine was partially absent



The theory of combining complementary proteins states that should one food be deficient in one or more amino acids, it should be eaten with another food high in these amino acids. Chick peas, for instance are deficient in tryptophan and sulfur-containing amino acids. If combined with sesame seeds which are high in tryptophan and sulfur-containing amino acids but low in isoleucine and lysine, you will obtain an almost perfect amino acid pattern. This illustrated by two superimposed graphs. (Chart III)



Proteins are combined to complement each other.

All it takes to apply the knowledge is a familiarity with theory and the proportions. The book explains the practical application very well and even contributes recipes incorporating the food combinations. If you, like many others, do not find these recipes very good, do not be too discouraged. Frances Lappé had a friend of hers, an excellent cook, improvise much better recipes for the book-**Recipes for a Small Planet**, based on the NPU theory.

Lappé's theory is well worth investigating and applying. The cry against vegetarianism and natural food diets low in animal protein has always pleaded concern for lack of sufficient amino acids in these diets. It makes one wonder how man in different cultures and times has survived with a meatless menu. The theory may not be the whole truth; time and research will likely improve it. In the meantime, it offers the first step in a new direction.

A few interesting natural food books are:

**Diet For a Small Planet** - Frances Moore Lappé Ms. Lappé explains the necessity, composition and use of protein in the body; suggests protein combinations that are more efficiently used by the body.

**Recipes for a Small Planet** Ellen Buchman Ewald

This book gives many varied recipes for the protein combination mentioned in **Diet for a Small Planet**.

**Breads You Wouldn't Believe**

Try them. If you are like most people, your breads are quite likely to turn out miserably the first few times but a practised hand can make these unbelievable breads!

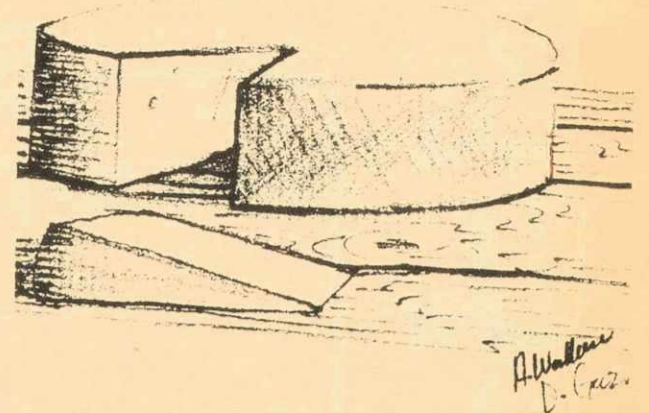
**Vegetarian Epicure**

A collection of meatless recipes including delicious sauces and soups, that make your mouth water.

**Favorite Not Foods** -- Hunter

**Back to Eden** -- Jethro Kloss

If you can ignore Kloss's fantacism and missionary zeal, you'll find lots of useful information on health care using natural remedies and preventive medicine.



**WHEN IS CHEESE NOT CHEESE? [WHEN IT'S PROCESSED]**

**WATERLOO (CUP)** -- Cheese concentrates a lot of food value into a small package. It contains most of the nutrients of milk including protein, riboflavin, and calcium. The protein in cheese is of the same high quality as the protein in meat, fish and eggs.

If you're cutting down on meat in protest against the use of hormones and antibiotics and sky-high prices, cheese can be your best friend. But not always. It depends on the nature of the cheese you choose.

Like all good friends, cheese has been subjected to the mighty and destructive club of commercial interests.

Somehow the word "cheese" on a snack food draws the consumer like a magnet. The flavor of cheese combined with the implication of nutrient value appears to be an irresistible combination.

Do not be deluded into serving these snacks to your family, or be foolish enough to believe that they contain all the nutrients of cheese. They don't.

Cheese flavor does not mean cheese. In processed food, it means a chemical flavor unrelated to nutrition. Food chemists have the competence and expertise of Merlin the magician. Their only interests are economy and long shelf-life. Remember that anything which prolongs "shelf-life" has the opposite effect on your life.

Cheese flavor boosters are not even distantly related to cheese - not even kissing cousins. They are a blend of spices, sugar, salt, MSG and imitation flavors.

A symbol of the manufacturers' necromancy of which you must be wary is "processed" cheese.

Beatrice Trum Hunter in her book **Consumer Beware** categorizes processed cheese as a "plastic mass."

Back in 1935, F.J. Schlink of Consumers Research warned that "one of the major atrocities of this age is the disappearance of natural cheese and the substitution for it of what is called "processed" cheese, made by grinding cheese of very low quality of any quantity that happens to be available, and mixing in chemicals and emulsifiers.

Natural cheese matures slowly, through enzymatic action. processed cheese are made quickly by heat and then aerated to increase their volume. As Beatrice Trum Hunter points out, "The end products have undergone such modifications that they scarcely deserve classification as food."

Cottage cheese, which weight watchers eat so virtuously by the carton, comes in for its share of tampering. Sodium hypochlorite maybe used in the process of washing the curd. Diacetyl may be added as a flavoring agent. Large amounts of salt may be added. Annatto (a dye derived from seeds) or cochineal (a dye derived from dried female insects) may be used as coloring agents. Hydrogen peroxide is frequently used as a preservative. Calcium sulfate, which is related to plaster of paris, which has no nutritive value and is a material of questionable safety in foods, is permitted and usually used on cottage cheese. Mold retarders of sorbic acid are also permitted. Nothing but the sorbic acid is required to be noted on the label.

The hydrogen peroxide is added to destroy bacteria as well as bleach the cheese. At the same time, it destroys vitamin A. Later, a catalase is added in order to remove the hydrogen peroxide. The wrapper on the cheese does not tell you about the peroxide. Nor does it tell you about the dyes that have been used in order to color the product. Blue or green coloring is sometimes added to white cheese to offset the natural white color of the milk.

Truly natural cheese is made from certified raw milk produced from animals on farms not using chemical fertilizers or pesticides, but only organic cheese meets all these requirements. Many varieties of natural cheese - like Edam, Gouda, Provolone and Swiss - which originated in Europe are now produced or sold in Canada.

