

tion with agitation. The resultant solution is then added to the slurry with agitation. After ten minutes of agitation the pH of the slurry is checked. The pH of the slurry should be in the range of 6.40 to 6.90. If necessary the pH of the slurry is adjusted to be in the specified range using potassium hydroxide or citric acid as described above.

The slurry is then spray dried to produce the base powder.

The base powder is dry blended with the remaining ingredients. In a preferred embodiment about twenty pounds of the base powder is dry blended with the vitamin premix and the flavoring ingredients. (In the case of the chocolate flavored product, the Dutch Process Cocoa is not included in this step as a flavoring ingredient.) The product of this step is then added to the remainder of the base powder. The sucrose, total milk protein isolate, fiber system, and in the case of the chocolate flavored product the Dutch Process Cocoa, are then dry blended with the base powder. While the components of the fiber system (oat hull fiber, gum arabic and sodium carboxymethylcellulose) have only been added to the dry blend individually thus far, it is believed that no adverse effects would be experienced if the components of the fiber system would first be dry blended together and then be dry blended with the base powder and other ingredients. It is understood that the sucrose may be replaced by a starch hydrolysate (e.g. corn syrup solids or malto-dextrins) having a dextrose equivalent of 10-25.

For ease of dispersibility upon reconstitution with water, the dry blended product is agglomerated. The preferred method of agglomeration is a fluidized bed agglomeration process in which the rewetted powder particles are suspended in air in such a way that the process promotes rapid and complete agglomeration in a very small space. In the preferred embodiment the agglomerated particles should be of a size having a loose bulk density in the range of 0.25-0.33 g/cc and a moisture content in the range of 3% to 5%.

The agglomerated powder is then packaged in nitrogen-flushed single serving pouches or any other suitable containers, preferably with an oxygen level below 2%.

The spray drying and agglomeration steps may be omitted if the weight control product will be packaged as a ready-to-serve or concentrated liquid.

The contents of a pouch containing an amount of the weight control product in a dry powder form for one serving (about 67 g for a vanilla flavored product and about 71 g for a chocolate flavored product) is reconstituted in about nine ounces of water. A partial listing of the nutritional information for one serving of the weight control product of the invention are listed in TABLE XIV.

TABLE XIV

Serving Size	67.0 gram for Vanilla Flavored Product.
	71.0 gram for Chocolate Flavored Product.
Calories	240
Protein	16 gram
Fat	6 gram
Carbohydrate	30 gram
Dietary Fiber	7 gram

The dietary fiber system of a powdered weight loss product containing a dietary fiber system according to the present invention taken as a whole comprises by weight: 35% to 45%, most preferably about 40%, dietary fiber which is both soluble and fermentable; 5% to 15%, most preferably about 10%, dietary fiber which is

both soluble and non-fermentable; and 45% to 55%, most preferably about 50%, dietary fiber which is both insoluble and non-fermentable. The dietary fiber system as a whole comprises by weight about 10 to 13% of the weight loss product in a powdered form of the product. In the preferred embodiment the dietary fiber which is both soluble and fermentable is gum arabic, the dietary fiber which is both soluble and non-fermentable is sodium carboxymethylcellulose, and the dietary fiber which is both insoluble and non-fermentable is oat hull fiber.

A dietary fiber system according to the present invention also has utility as a dry fiber system which may be added to a nutritional product, such as milk, fruit juice, other beverages, baked goods, etc. Several combinations of dietary fiber were dry blended together. Each of the fiber blends was then added to both orange juice and milk at a concentration of 3.4 g per 8 fluid ounce serving. In each of the trials the fiber blend was well dispersed.

In accordance with the invention a dietary fiber system for use in a nutritional product the fiber system as a whole comprises by weight: about 5% to 50%, preferably about 35% to 45% and most preferably about 40%, dietary fiber which is both soluble and fermentable; about 5% to 20%, preferably about 5% to 15% and most preferably about 10%, dietary fiber which is both soluble and non-fermentable; and about 45% to 80%, preferably about 45% to 55% and most preferably about 50%, dietary fiber which is both insoluble and non-fermentable. A liquid nutritional product according to the invention and a powdered substance according to the invention which may be blended with a liquid to make a liquid nutritional product contain the dietary fiber system set forth in the preceding sentence. In each of the foregoing embodiments of the invention it preferred that: the fiber which is both soluble and fermentable is gum arabic; the fiber which is both soluble and non-fermentable is sodium carboxymethylcellulose; and the fiber which is both insoluble and non-fermentable is at hull fiber.

The foregoing detailed description is given for clearness of understanding only, and no unnecessary limitations should be understood therefrom, as aspects and advantages within the scope of the present invention will be apparent to those skilled in the art.

We claim:

1. A dietary fiber system for use in a nutritional product wherein the fiber system as a whole comprises by weight: 5% to 50% dietary fiber which is both soluble and fermentable; 5% to 20% dietary fiber which is both soluble and non-fermentable; and 45% to 80% dietary fiber which is both insoluble and non-fermentable.

2. A dietary fiber system according to claim 1 wherein the fiber which is both soluble and fermentable is gum arabic; the fiber which is both soluble and non-fermentable is sodium carboxymethylcellulose; and the fiber which is both insoluble and non-fermentable is oat hull fiber.

3. A dietary fiber system for use in a nutritional product comprising by

(a) about 5% to 50% gum arabic;

(b) about 5% to 20% sodium carboxymethylcellulose; and

(c) about 45% to 80% oat hull fiber.

4. A dietary fiber system according to claim 3 comprising by weight: