After pH adjustment, the solubilized polypeptide material may then be formulated into a beverage in the known manner, as for example, by addition to the dispersion of a flavor such as orange, cola, grape, vanilla, fruit or root beer; vitamins and minerals, coloring and preservative. If desired, the acidified beverage may also be carbonated. The beverage can be used immediately, or packaged as by bottling or canning for future use.

The invention will be understood more fully by reference to the following specific example. It is understood that the example is presented for the purpose of illustration only and is not intended as a limitation of the invention.

EXAMPLE

An aqueous slurry of soya grits, 30 kilograms having a soya grit concentration of 6.25 percent (16 kilograms) is prepared using Soyabits 20 AW, defatted soya grits, 55-70 percent WSP, (water soluble protein) containing 50 wt. percent protein and commercially available from Central Soya, a Chicago based company. 12 ppm of F_2 antifoam, a food grade silicone obtained from Hodag Chemical Corp., is added. The slurry is preheated at a temperature of 225°F. for 5 seconds by conducting it through a heat exchanger which contains a coil of tubing in a constant-temperature environment although other indirect heaters or direct steam injection can also be used to achieve the same conditions.

The preheated aqueous slurry is rapidly cooled to 130°F., and Montase 110, a commerical mixture of neutral protease, alkaline protease and amylase, is added. This enzyme mixture can be provided by fermentation with *Bacillus subtilis* strain NRRL–B–3411 and typically can contain (recovered solids) in the range of from about 700,000 to 2,000,000 units of neutral protease activity, about 200,000 to 500,000 units of alkaline protease activity, and about 300,000 to 500,000 units of amylase activity per gram. Montase 110 is added in powder form in an amount equivalent to one wt. percent of the amount of protein present in the slurry. The resulting mixture is stirred for approximately 105 minutes during which period the temperature is maintained at approximately 130°F. On completion of the 105-minute period, the temperature is lowered to 77°F., the pH of the slurry is lowered to 3.5 by addition of 85 percent aqueous phosphoric acid (277 grams). The acidified solution is allowed to settle overnight and an amount of solid material precipitates. Precipitated material is separated from the solution by centrifugation or decantation. A clear, acidified solution rich in nutritional polypeptides is obtained.

To formulate the acidified solubilized polypeptide into a beverage, a portion of the thus prepared material is mixed with 60 percent w/w (weight per weight) sucrose solution (720 grams), sodium benzoate (4.78 grams), lemon and lime oils (5.0 grams) FD and C yellow number 5 coloring (0.01 gram) and a mixture of vitamin A, B1, B2, B6, B12, D and niacin in a lactose carrier (1.2 grams). A resutling clear, pleasant tasting acidified beverage is then passed through a carbonator to give a protein beverage containing 2.5 volumes of carbon dioxide. The polypeptide-rich beverage is provided with a smooth consistency and on drinking gives no indication of a gritty, bitter or otherwise unpleasant mouth feel.

Various modfications and equivalents will be apparent to one skilled in the art and may be made in the process of the present invention without departing from the spirit or scope thereof and it is therefore to be understood that the invention is to be limited only by the scope of the appended claims.

We claim:

1. A process of making an acidic, aqueous solution of polypeptides for use as a base in preparing an acidic, protein beverage, comprising (a) heating an aqueous slurry of a defatted protein selected from the group consisting of soya, cotton or corn seeds at a temperature of from about 150° to 375°F. for a time sufficient to increase the yield of a soluble, nutritional, polypeptide product which is produced when the heated slurry is subsequently subjected to enzymatic hydrolysis, but insufficient to deleteriously affect the flavor of said polypeptide product, (b) subjecting the resulting slurry to enzymatic hydrolyis conditions including the action of a proteolytic enzyme to produce polypeptides, (c) adjusting the pH of the resulting slurry to within the range of from about 2.5 to 6.0, and (d) removing precipitated material from the slurry to leave a clear, acidic solution of polypeptides suitable for use as a base in preparing an acidic, protein beverage.

2. The process of claim **1** wherein the protein used is defatted soya protein.

3. The process of claim **1** wherein the aqueous slurry of defatted protein is heated for from about 0.01 to 120 seconds.

4. The process of claim **1** wherein the enzymatic hydrolyis conditions include a temperature of from about 105° to 150°F. and a residence time of about 30 to 150 minutes.

5. The process of claim **1** wherein the enzyme is a neutral protease.

6. A process of making an acidic, carbonated protein beverage from defatted soya protein, comprising heating an aqueous slurry of the defatted soya protein at a temperature of from about 150° to 375°F. for about 0.01 to 120 seconds, subjecting the resulting slurry to enzymatic hydrolyis conditions including the action of a proteolytic enzyme to produce polypepetides, adjusting the pH of the resulting slurry to within the range of from about 3.0 to 4.0, removing precipitated material from the acidified slurry to leave a clear, acidic solution of polypeptides, and formulating the solution into an acidic, carbonated beverage.

7. The process of claim **6** wherein the soya protein is in the form of soya flour or soya grits.

8. The process of claim **7** wherein the slurry is heated at a temperature of from about 200° to 265°F.

9. The process of claim **8** wherein the enzyme is neutral protease and the enzymatic hydrolyis conditions include a temperature of from about 105° to 150°F. and a residence time of from about 30 to 150 minutes.

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