

Corn Processing, location under the name of cornsweet 95), honey, glycerine, crystalline fructose, high oleic safflower oil (distributed by California Oils, Richmond, Calif.) and bleached lecithin in a Hobart Mixer for 5 minutes.

All of the liquid preblend is added to the dry preblend and mixed until combined. The canola oil is prepared separately by placing the canola oil in a jacketed kettle and heating to 65° C. with constant mixing.

A moderate shear screw configuration containing 5 kneading zones is placed in a 57 mm Werner & Pfleiderer twin screw extruder with a 8.9 centimeter in diameter outlet. The 10 sections are set up as follows: cold water (12° C.) is circulated through the first section containing the feed inlet; the next 5 sections are heated to 121° C. by circulating hot oil through the jackets; the 8th section contains a vent port and is not heated; and the last two sections, 9 & 10, are cooled to 90° C. using cold water in the jackets. A 1.2 meter section of 10 centimeter in diameter Teflon lined pipe (Resistoflex TFE Teflon lined pipe made by Resistoflex Div. of Crane Co.) is attached directly to the extruder outlet. A die containing 6 holes at 0.4 centimeters in diameter is attached to the end of the attachment.

The prewetted dry ingredients, at 30% moisture, are placed in an Acrison feeder and fed continuously into the hopper of the extruder at a rate of 32.8 kgm/hr.

The heated canola is pumped continuously into a port in the second section of the extruder, at a rate of 12.5 kgm/hr. Additional water is also added at the same location, to adjust the moisture of the final product. Typically, this is held at 7.3 kgm/hr. The extruder is operated at 200 rpm, which results in a torque of 30%, and a pressure of 350 psi at the end of the extruder. At this rate, the dough has a retention time of 15 minutes in the attachment and the temperature of the dough exiting the die is 115° C.

As the strands of cooked dough leave the die at the end of the attachment, they are directed over a continuous belt conveyor where they are cooled to 54° C. by pulling air through the perforated belt. The cooled strands are sized using a Conair strand cutter, by operating the feed roll at about 130 rpm and the cutter roll at about 150 rpm to form pellets about 0.635 centimeter long.

These pellets at about 18% moisture are air-cooled at 37° C. to 49° C. and fed directly to Ferrel Ross flaking rolls. Flakes are formed at about 0.025 to 0.030 of an inch thick and toasted to a moisture of 2.5% in a Jetzone oven.

We claim:

1. A nutritional bar comprising:

- a) a source of fat;
- b) a carbohydrate system consisting essentially of:
 - i) a source of fructose from about 65 wt/wt % to about 100 wt/wt % of the carbohydrate system, and
 - ii) at least one nonabsorbent carbohydrate source wherein said nonabsorbent carbohydrate is less than about 35 wt/wt % of the carbohydrate system; and
- c) a source of protein.

2. The nutritional bar according to claim 1 wherein said nutritional bar further comprises less than about 30 wt/wt % of the nutritional bar as dietary fiber selected from the group consisting of soluble fiber, insoluble fiber, fermentable fiber, non-fermentable fiber and mixtures thereof.

3. The nutritional bar according to claim 1 wherein said nutritional bar further comprises less than about 2.5 wt/wt % of the nutritional bar as indigestible oligosaccharides.

4. The nutritional bar according to claim 1 in which:

- a) the carbohydrate system comprises from about 45% to about 90% of the total calories of the nutritional bar;
- b) the fat source comprises less than about 30% of the total calories of the nutritional bar; and
- c) the protein source comprises from about 10% to about 25% of the total calories of the nutritional bar.

5. The nutritional bar according to claim 4 wherein the source of fat comprises from about 10% to about 30% of the total calories of the nutritional bar.

6. The nutritional bar according to claim 4 wherein the source of protein comprises from about 10% to about 20% of the total calories of the nutritional bar.

7. The nutritional bar of claim 4 wherein the carbohydrate system comprises from about 50% to about 80% of the total calories of the nutritional bar.

8. A method for providing nutrition to an individual with diabetes comprising enterally administering the nutritional bar according to claim 4.

9. The nutritional bar according to claim 1 further including at least one additional nutrient selected from the group consisting of vitamin A, vitamin B., vitamin B₂, vitamin B₆, vitamin B₁₂, vitamin C, vitamin D, vitamin E, vitamin K, biotin, carnitine, taurine, folic acid, pantothenic acid, niacin, choline, calcium, phosphorus, magnesium, zinc, manganese, copper, sodium, potassium, chloride, iron, selenium, chromium and molybdenum.

10. A method for providing nutrition to an individual with diabetes comprising enterally administering the nutritional bar according to claim 1.

11. A nutritional bar comprising:

- a) a carbohydrate system comprising from about 45% to about 90% of the total calories of the nutritional bar and wherein said carbohydrate system consists essentially of a source of fructose from about 65 wt/wt % to about 100 wt/wt % of the carbohydrate system and at least one nonabsorbent carbohydrate source comprising less than about 35 wt/wt % of the carbohydrate system,
- b) a fat source comprising less than about 30% of the total calories of the nutritional bar,
- c) a protein source comprising from about 10% to about 25% of the total calories of the nutritional bar,
- d) a dietary fiber source comprising less than about 30 wt/wt % of the nutritional bar; and
- e) an indigestible oligosaccharide source comprising less than about 2.5 wt/wt % of the nutritional bar.

12. The nutritional bar according to claim 11 further including at least one additional nutrient selected from the group consisting of vitamin A, vitamin B., vitamin B₂, vitamin B₆, vitamin B₁₂, vitamin C, vitamin D, vitamin E, vitamin K, biotin, carnitine, taurine, folic acid, pantothenic acid, niacin, choline, calcium, phosphorus, magnesium, zinc, manganese, copper, sodium, potassium, chloride, iron, selenium, chromium and molybdenum.

13. The nutritional bar according to claim 11 wherein the nutritional bar is coated with at least one coating selected from the group consisting of compounded confectionery coating, milk chocolate coating, glazes, shellac, sugar free compounded confectionery coating, sugar free glazes and sugar free shellac.

14. A method for providing nutrition to an individual with diabetes comprising enterally administering the nutritional bar according to claim 11.