

temperature of 170° F. and an outlet air temperature of 130° F. A white free-flowing powder results with the following composition:

	Percent
Sodium caseinate -----	10
Cottonseed oil -----	80
Sucrose -----	5
Glycerin -----	2
Water -----	3

A vanilla flavored bar is made with the above dispersion, as follows: 96.75 parts of the above dispersion plus 3 parts water is mixed with .25 part of vanilla extract in a Hobart mixer. The materials are mixed at No. 3 speed for two minutes. Thirty gram units are placed into a 2" x 4" mold and subjected to 250 p.s.i. pressure. After removal from the mold, the bars are palatable and could be eaten "as is" or broken up and added to water.

EXAMPLE XXIV

A binder formulation was made as follows:

	Percent
Nonfat milk solids -----	20
Cottonseed oil -----	10
Sucrose -----	15
Glycerin -----	5
Water -----	50

The stable dispersion is formed by placing the cottonseed oil in a Waring Blendor, adding the nonfat milk solids and sucrose and mixing. The glycerin is dissolved in water and the solution is added to the material in the mixer. A stable dispersion is formed with continued mixing at high speed for one minute.

A corn flake bar is made with the above dispersion, as follows: 20 parts of the above dispersion is mixed with 77 parts corn flakes and 3 parts water in a Hobart mixer. The materials are mixed at No. 3 speed for two minutes. Thirty gram units are placed into a 2" x 4" mold and subjected to 250 p.s.i. pressure. After removal from the mold, the bars are palatable and could be eaten "as is" or broken up and added to water.

The bars were tested for strength, brittleness and sturdiness by dropping the bar through a free fall of 6 feet to a concrete floor. The number of the drops in which the bar broke or shattered was recorded. In general, the bars had sufficient hardness to withstand 10 such drops. It was found that the hardness can be adjusted by varying the following:

- (1) The amount of glycerin added,
- (2) the pressure applied,
- (3) the particle size of the ingredients, and
- (4) moisture content during application of pressure.

By varying the above in the ranges shown generally in the examples, a wide range of hardness and bar density may be obtained. In general, the preferred density of the food bar is 0.5 to 1.0 gm. per cc.

EXAMPLE XV

Food bars are made as described in Examples I-XXIV but without the edible food particles dispersed there-through. The resulting bars are very high in caloric content, have satisfactory strength and also have satisfactory taste and texture when eaten.

Although the invention has been described with particular reference to a rectilinear shaped bar, those skilled in the art will readily recognize that it applies with equal force to a cylindrical configuration such as a tablet. It may also take other physical shapes such as a sheet. And, of course, the edible particles and binder may be formed into an irregular shape such as a shape chosen to conform to a given irregular space in a soldier's food packet.

Having thus described the invention, the following is claimed.

It is claimed:

1. A process for forming a compact food unit from

edible particles and edible fat, a hydrophilic film former and water which comprises; mixing said edible particles, fat, film former and water for a time sufficient to form a dispersion which will not release its fat when one drop of said dispersion is placed into 250 ml. of water at a temperature of 140° F., said edible particles being present in an amount ranging from about 0.25 to 80% of the total food unit weight, said fat, film former and water providing an edible binder for said edible particles and being present therein in an amount ranging from about 20 to 99.75% by weight of the food unit with the fat comprising about 10 to about 80% of the binder weight and the film former from about 5% to 90% of the dry weight of the binder; drying said dispersion to a moisture content not greater than 10% of the total weight of said mixture; subjecting said dispersion to a pressure of 250-750 p.s.i. in a confined mold and releasing said pressure and removing said dispersion from said mold.

2. A process for forming a compact food unit from edible particles, edible fat, hydrophilic film former and water which comprises; forming a binder by mixing said fat, hydrophilic film-former and water which comprises, forming a binder by mixing said fat in an amount ranging from about 5 to 90% of the dry weight of the binder, film former in an amount ranging from about 10 to about 80% of the binder weight and water for a time sufficient to form a dispersion of oil in said film former and water suspension that will not release its fat when one drop of said binder is placed into 250 ml. of water at a temperature of 140° F.; drying said binder; mixing said dry binder with edible particles and moisture; subjecting said binder and edible particles to a pressure of 250-750 p.s.i. in a confined mold and releasing said pressure and removing said binder and edible particles from said mold to thereby form said compact food unit.

3. The process of claim 2 wherein said edible particles are provided in a quantity that is 30-70% of the weight of said compact food unit, said fat and film former are provided in a range of relative quantities of 4 parts fat; 1 part film former to 2 parts fat; 3 parts film former and said drying of said binder consists of spray drying.

4. The process according to claim 3 wherein said moisture is present in an amount less than about 5% by weight of the food unit.

5. The process according to claim 1 wherein at least a portion of said moisture is removed after release from a mold.

6. The process according to claim 1 wherein said edible oil film-former and water are mixed together prior to the admixture of said edible particles.

7. The process according to claim 3 wherein the edible particles and the spray-dried binder are mixed with water in an amount sufficient to cause the binder surface to become tacky.

8. A compact, solid food unit comprising:  
 (a) an edible binder in an amount ranging from about 20% to 99.75% by weight of the food unit, said binder being characterized as having a discontinuous phase of fat globules in an amount ranging from about 10 to about 80% of the binder weight and continuous phase containing water and a hydrophilic film former in an amount ranging from about 5% to 90% of the dry weight of the binder with said continuous phase encapsulating said discontinuous phase of fat globules, and

(b) discrete edible food particles in an amount ranging from 0.25 to 80% of the total food unit weight uniformly distributed throughout said food unit and supported therein by said binder, said food unit being further characterized as containing from 2% to less than 10% water by weight and possessing a hard but frangible structure with water-dispersible properties.

9. The food unit according to claim 8 wherein the